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- BERGMAN, P. Survey Observations of c-C<sub>2</sub>H<sub>4</sub>O and CH<sub>3</sub>CHO toward Massive Star-forming Regions: Erratum (ApJ, 560, 792 [2001]). *M. Ikeda, M. Ohishi, A. Nummelin, J. E. Dickens, P. Bergman, Å. Hjalmarson, & W. M. Irvine*. 571, 560 (2002) (Orig. paper in 560, 792 [2001])
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- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. II. Measurement of Foreground Zodiacal Light. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore*. 571, 85 (2002)
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- BILDSTEN, LARS. Transient X-Ray Binaries in Elliptical Galaxies. *Anthony L. Piro & Lars Bildsten*. 571, L103 (2002)
- BINETTE, LUC. Are the Narrow-Line Regions in Active Galaxies Dusty and Radiation Pressure Dominated? *Michael A. Dopita, Brent A. Groves, Ralph S. Sutherland, Luc Binette, & Gerald Cecil*. 572, 753 (2002)
- BIRCH, A. C. Time-Distance Heliogeophysics: The Forward Problem for Random Distributed Sources. *L. Gizon & A. C. Birch*. 571, 966 (2002)
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- BLACKMAN, ERIC G. Dynamical Quenching of the  $\alpha^2$  Dynamo. *George B. Field & Eric G. Blackman*. 572, 685 (2002)
- BLAIN, A. W. Detecting Gravitational Lensing Cosmic Shear from Samples of Several Galaxies Using Two-Dimensional Spectral Imaging. *A. W. Blain*. 570, L51 (2002)
- BLAKE, G. A. The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte*. 570, 708 (2002)
- BLAKE, GEOFFREY A. A Tidally Interacting Disk in the Young Triple System WL 20? *Mary Barsony, Thomas P. Greene, & Geoffrey A. Blake*. 572, L75 (2002)
- Looking for Pure Rotational H<sub>2</sub> Emission from Protoplanetary Disks. *Matthew J. Richter, Daniel T. Jaffe, Geoffrey A. Blake, & John H. Lacy*. 572, L161 (2002)
- BLANTON, MICHAEL R. See ZEHAU, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- BLOEMEN, H. See MCCONNELL, M. L., et al. The Soft Gamma-Ray Spectral Variability of Cygnus X-1.
- BLOOM, ELLIOTT D. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65.
- BLOOM, J. S. See PRICE, P. A., et al. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow.
- Detection of a Supernova Signature Associated with GRB 011121. *J. S. Bloom, S. R. Kulkarni, P. A. Price, D. E. Reichart, T. J. Galama, B. P. Schmidt, D. A. Frail, E. Berger, P. J. McCarthy, R. A. Chevalier, J. C. Wheeler, J. P. Halpern, D. W. Fox, S. G. Djorgovski, F. A. Harrison, R. Sari, T. S. Axelrod, R. A. Kimble, J. Holtzman, K. Hurley, F. Frontera, L. Piro, & E. Costa*. 572, L45 (2002)
- See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- BOBROWSKY, MATTHEW. Two Subclasses of Proto-Planetary Nebulae: Model Calculations. *Margaret Meixner, Toshiya Ueta, Matthew Bobrowsky, & Angela Speck*. 571, 936 (2002)
- BOCK, J. J. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- BODE, M. F. The Central Binary and Surrounding Nebula of the Symbiotic Star V1016 Cygni. *C. Brocksopp, M. F. Bode, S. P. S. Eyres, M. M. Crocker, R. Davis, & A. R. Taylor*. 571, 947 (2002)
- BODO, ENRICO. Rotational and Vibrational Excitation of CO Molecules by Collisions with <sup>4</sup>He Atoms. *Cesare Cecchi-Pestellini, Enrico Bodo, N. Balakrishnan, & Alexander Dalgarno*. 571, 1015 (2002)
- BOENHARDT, HERMANN. Recurring Outbursts and Nuclear Fragmentation of Comet C/2001 A2 (LINEAR). *Zdenek Sekanina, Emmanuel Jehin, Hermann Boehnhardt, Xavier Bonfils, Oliver Schuetz, & Daniel Thomas*. 572, 679 (2002)
- BOER, M. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- BOGART, RICHARD S. Evolving Submerged Meridional Circulation Cells within the Upper Convection Zone Revealed by Ring-Diagram Analysis.

- Deborah A. Haber, Bradley W. Hindman, Juri Toomre, Richard S. Bogart, Rasmus M. Larsen, & Frank Hill. 570, 855 (2002)
- BOND, I. H. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- BOND, J. R. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.  
See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- BONET, J. A. Infrared Photometry of Solar Photospheric Structures. II. Center-to-Limb Variation of Active Regions. M. Sánchez Cuberes, M. Vázquez, J. A. Bonet, & M. Sobotka. 570, 886 (2002)
- BONFILS, XAVIER. Recurring Outbursts and Nuclear Fragmentation of Comet C/2001 A2 (LINEAR). Zdenek Sekanina, Emmanuel Jehin, Hermann Boehnhardt, Xavier Bonfils, Oliver Schuetz, & Daniel Thomas. 572, 679 (2002)
- BOOGERT, A. C. A. The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte. 570, 708 (2002)
- BOROZDIN, KONSTANTIN N. On the X-Ray Source Luminosity Distributions in the Bulge and Disk of M31: First Results from the XMM-Newton Survey. Sergey P. Trudolyubov, Konstantin N. Borozdin, William C. Priedhorsky, Keith O. Mason, & France A. Cordova. 571, L17 (2002)
- BORRILL, J. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.  
See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- BORYS, COLIN. Understanding the Nature of the Optically Faint Radio Sources and Their Connection to the Submillimeter Population. Scott C. Chapman, Geraint F. Lewis, Douglas Scott, Colin Borys, & Eric Richards. 570, 557 (2002)
- BOSCALERI, A. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.  
See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- BOUCHET, PATRICE. Evolution and Geometry of Hot Spots in Supernova Remnant 1987A. Ben E. K. Sugerman, Stephen S. Lawrence, Arlin P. S. Crotts, Patrice Bouchet, & Steve R. Heathcote. 572, 209 (2002)
- BOWER, GEOFFREY C. The Spectrum and Variability of Circular Polarization in Sagittarius A from 1.4 to 15 GHz. Geoffrey C. Bower, Heino Falcke, Robert J. Sault, & Donald C. Backer. 571, 843 (2002)
- BOYLE, B. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- BOYLE, B. J. Discovery of Radio-loud Broad Absorption Line Quasars Using Ultraviolet Excess and Deep Radio Selection: Erratum (ApJ, 505, L17 [1998]). M. S. Brotherton, W. van Breugel, R. J. Smith, B. J. Boyle, T. Shanks, S. M. Croom, L. Miller, & R. H. Becker. 571, L191 (2002)
- BRADBURY, S. M. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- BRAGA, J. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- BRANCH, DAVID. See PUN, CHUN S. J., et al. Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- BRANDT, W. N. See MAEDA, Y., et al. A Chandra Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center? Variability of the X-Ray P Cygni Line Profiles from Circinus X-1 Near Zero Phase. N. S. Schulz & W. N. Brandt. 572, 971 (2002)
- BRANHAM, RICHARD L., JR. Kinematics of OB Stars. Richard L. Branham, Jr. 570, 190 (2002)
- BREGMAN, JESSE. Mid-Infrared Observation of Mass Loss in Elliptical Galaxies. Alex Athey, Joel Bregman, Jesse Bregman, Pasquale Temi, & Marc Sauvage. 571, 272 (2002)
- BREGMAN, JOEL. Mid-Infrared Observation of Mass Loss in Elliptical Galaxies. Alex Athey, Joel Bregman, Jesse Bregman, Pasquale Temi, & Marc Sauvage. 571, 272 (2002)
- BREGMAN, JOEL N. Untangling the X-Ray Emission from the Sa Galaxy NGC 1291 with Chandra. Jimmy A. Irwin, Craig L. Sarazin, & Joel N. Bregman. 570, 152 (2002)
- BRESOLIN, FABIO. Optical Spectroscopy of Metal-rich H II Regions and Circumstellar Hot Spots in M83 and NGC 3351. Fabio Bresolin & Robert C. Kennicutt, Jr. 572, 838 (2002)
- BRICKHOUSE, N. S. Quiescent and Flaring Structure in RS Canum Venaticorum Stars. J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree. 570, 799 (2002)
- BRIGGS, J. W. See PARK, H. S., et al. LOTIS. Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- BRIGGS, JOHN W. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- BRIGGS, M. S. Extended Power-Law Decays in BATSE Gamma-Ray Bursts: Signatures of External Shocks? T. W. Gibling, V. Connaughton, J. van Paradijs, R. D. Preece, M. S. Briggs, C. Kouveliotou, R. A. M. J. Wijers, & G. J. Fishman. 570, 572 (2002)
- BRINKMAN, J. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- BRINKMAN, JON. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.  
See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- BRINKMANN, J. See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.  
See MCKAY, TIMOTHY A., et al. Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws.  
See PARK, H. S., et al. LOTIS. Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- BRINKS, ELIAS. ROSAT X-Ray Observations of the Dwarf Galaxy Holmberg II. Jürgen Kerp, Fabian Walter, & Elias Brinks. 571, 809 (2002)
- BRISKEN, WALTER F. Very Long Baseline Array Measurement of Nine Pulsar Parallaxes. Walter F. Brisken, John M. Benson, W. M. Goss, & S. E. Thorsett. 571, 906 (2002)
- BROCKSOPP, C. The Central Binary and Surrounding Nebula of the Symbiotic Star V1016 Cygni. C. Brocksopp, M. F. Bode, S. P. S. Eyres, M. M. Crocker, R. Davis, & A. R. Taylor. 571, 947 (2002)
- BROTHERTON, M. S. Discovery of Radio-loud Broad Absorption Line Quasars Using Ultraviolet Excess and Deep Radio Selection: Erratum (ApJ, 505, L17 [1998]). M. S. Brotherton, W. van Breugel, R. J. Smith, B. J. Boyle, T. Shanks, S. M. Croom, L. Miller, & R. H. Becker. 571, L191 (2002)
- BROWN, M. J. I. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- BRUGGEN, M. The Effect of Mixing on Metallicity Gradients in the Intracluster Medium. M. Brüggen. 571, L13 (2002)
- BRUMMELL, NICHOLAS H. Penetration and Overshooting in Turbulent Compressible Convection. Nicholas H. Brummell, Thomas L. Chune, & Juri Toomre. 570, 825 (2002)
- BRUN, ALLAN SACHA. Turbulent Convection under the Influence of Rotation: Sustaining a Strong Differential Rotation. Allan Sacha Brun & Juri Toomre. 570, 865 (2002)
- BRUSA, M. See COMASTRI, A., et al. The HELLAS2 XMM Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy.
- BUCKLEY, J. H. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- BUDAVARI, TAMAS. See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- BULIK, TOMASZ. Study of Gamma-Ray Burst Binary Progenitors. Krzysztof Belczynski, Tomasz Bulik, & Bronislaw Rudak. 571, 394 (2002)  
Merger Sites of Double Neutron Stars and their Host Galaxies. Krzysztof Belczynski, Tomasz Bulik, & Vassiliki Kalogera. 571, L147 (2002)  
A Comprehensive Study of Binary Compact Objects as Gravitational Wave Sources: Evolutionary Channels, Rates, and Physical Properties. Krzysztof Belczynski, Vassiliki Kalogera, & Tomasz Bulik. 572, 407 (2002)
- BULLOCK, JAMES S. Dark Matter Properties and Halo Central Densities. S. M. Khairul Alam, James S. Bullock, & David H. Weinberg. 572, 34 (2002)
- BURGASSER, ADAM J. Evidence of Cloud Disruption in the LT Dwarf Transition. Adam J. Burgasser, Mark S. Marley, Andrew S. Ackerman, Didier Saumon, Katharina Lodders, Conrad C. Dahn, Hugh C. Harris, & J. Davy Kirkpatrick. 571, L151 (2002)



- BURKERT, ANDREAS. The Validity of the Adiabatic Contraction Approximation for Dark Matter Halos. *Ronald Jessiet, Thorsten Naab, & Andreas Burkert*. 571, L89 (2002)
- BURLES, SCOTT. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See COWAN, JOHN J., et al. The Chemical Composition and Age of the Metal-poor Halo Star BD +17°3248.
- BURNLEY, A. W. The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. *J. P. Aufdenberg, P. H. Hauschildt, E. Baron, T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry*. 570, 344 (2002)
- BURROWS, D. N. See MAEDA, Y., et al. A *Chandra* Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center?
- BURUD, INGUNN. See HJORTH, JENS, et al. The Time Delay of the Quadruple Quasar RX J0911.4+0551.
- BUSARELLO, G. Optical and Near-Infrared Structural Properties of Cluster Galaxies at  $z \sim 0.3$ . *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli*. 571, 790 (2002)
- BUTLER, N. See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- BUTLER, R. PAUL. Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. *Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler*. 571, 519 (2002)
- Two Extrasolar Planets from the Anglo-Australian Planet Search. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, & Brad D. Carter*. 571, 528 (2002)
- CALDER, ALAN C. Numerical Models of Binary Neutron Star System Mergers. II. Coalescing Models with Post-Newtonian Radiation Reaction Forces. *Alan C. Calder & Edward Y. M. Wang*. 570, 303 (2002)
- CALDWELL, D. A. Hydrocarbons, Ices, and "XCN" in the Line of Sight toward the Galactic Center. *J. E. Chiar, A. J. Adamson, Y. J. Pendleton, D. C. B. Whittet, D. A. Caldwell, & E. L. Gibb*. 570, 198 (2002)
- CALDWELL, J. A. R. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- CAMILO, F. Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian*. 570, L89 (2002)
- Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope. *F. Camilo, I. H. Stairs, D. R. Lorimer, D. C. Backer, S. M. Ransom, B. Klein, R. Wielebinski, M. Kramer, M. A. McLaughlin, Z. Arzoumanian, & P. Muller*. 571, L41 (2002)
- CAMPANA, S. The Brera Multiscale Wavelet Detection Algorithm Applied to the *Chandra* Deep Field-South: Deeper and Deeper. *A. Moretti, D. Lazdani, S. Campana, & G. Tagliaferri*. 570, 502 (2002)
- CANAL, RAMON. Galactic Cosmic Rays from Superbubbles and the Abundances of Lithium, Beryllium, and Boron. *Andreu Alibés, Javier Labay, & Ramon Canal*. 571, 326 (2002)
- CANIZARES, CLAUDE R. The Shape of the Relativistic Iron K $\alpha$  Line from MCG -6-30-15 Measured with the *Chandra* High Energy Transmission Grating Spectrometer and the Rossi X-Ray Timing Explorer. *Julia C. Lee, Kazushi Iwasawa, John C. Houck, Andrew C. Fabian, Herman L. Marshall, & Claude R. Canizares*. 570, L47 (2002)
- Chandra* Detection of O VIII Ly $\alpha$  Absorption from an Overdense Region in the Intergalactic Medium. *Taotao Fang, Herman L. Marshall, Julia C. Lee, David S. Davis, & Claude R. Canizares*. 572, L127 (2002)
- CAO, XINWU. Evidence for the Evolutionary Sequence of Blazars: Different Types of Accretion Flows in BL Lacertae Objects. *Xinwu Cao*. 570, L13 (2002)
- CAPACCIOLI, M. Optical and Near-Infrared Structural Properties of Cluster Galaxies at  $z \sim 0.3$ . *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli*. 571, 790 (2002)
- CAPETTI, ALESSANDRO. The Nuclei of Radio Galaxies in the Ultraviolet: The Signature of Different Emission Processes. *Marco Chiaberge, F. Duccio Macchetto, William B. Sparks, Alessandro Capetti, Mark G. Allen, & André R. Martel*. 571, 247 (2002)
- CARATTI, ALESSIO. Understanding the nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43: Erratum (ApJ, 570, L33 [2002]). *Teresa Giannini, Brunella Nisini, Alessio Caratti, & Dario Lorenzetti*. 571, L195 (2002)
- CARATTI O GARATTI, ALESSIO. Understanding the Nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43. *Teresa Giannini, Brunella Nisini, Alessio Caratti o Garatti, & Dario Lorenzetti*. 570, L33 (2002)
- CAREY, LARRY. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- CAREY, SEAN J. An Infrared Ring Nebula around MSXSC G358.5391+00.1305: The True Nature of Suspected Planetary Nebula Wray 17-96 Determined via Direct Imaging and Spectroscopy. *Michael P. Egan, J. Simon Clark, Donald R. Mizuno, Sean J. Carey, Iain A. Steele, & Stephan D. Price*. 572, 288 (2002)
- CARLBERG, R. G. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- CARLSSON, MATS. Dynamic Hydrogen Ionization. *Mats Carlsson & R. F. Stein*. 572, 626 (2002)
- CARSON, M. J. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- CARTER, BRAD D. Two Extrasolar Planets from the Anglo-Australian Planet Search. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, & Brad D. Carter*. 571, 528 (2002)
- CARTER-LEWIS, D. A. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- CASELLA, P. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- CASELLI, PAOLA. Dense Cores in Dark Clouds. XIV. N $_2$ H\* (1-0) Maps of Dense Cloud Cores. *Paola Caselli, Priscilla J. Benson, Philip C. Myers, & Mario Tafalla*. 572, 238 (2002)
- CASINI, ROBERTO. A Classical Model for the Damped, Magnetic Dipole Oscillator. *Roberto Casini & Haosheng Lin*. 571, 540 (2002)
- CASTANDER, FRANCISCO J. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- CASTANEDA, H. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- CASTRO-TIRADO, A. J. See MILLER, J. M., et al. Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the *XMM-Newton*/EPIC-pn Spectrum of XTE J1650-500.
- See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- CATANESE, M. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- CAVALIERE, A. Supermassive Black Holes in Galactic Nuclei. *A. Cavaliere & V. Vittorini*. 570, 114 (2002)
- The Blazar Main Sequence. *A. Cavaliere & V. D'Elia*. 571, 226 (2002)
- CECCARELLI, C. The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte*. 570, 708 (2002)
- CECCHI-PESTELLINI, CESARE. Rotational and Vibrational Excitation of CO Molecules by Collisions with  $^4\text{He}$  Atoms. *Cesare Cecchi-Pestellini, Enrico Bodo, N. Balakrishnan, & Alexander Dalgarno*. 571, 1015 (2002)
- CECIL, GERALD. Are the Narrow-Line Regions in Active Galaxies Dusty and Radiation Pressure Dominated? *Michael A. Dopita, Brent A. Groves, Ralph S. Sutherland, Luc Binette, & Gerald Cecil*. 572, 753 (2002)
- CELOTTI, A. See ZHANG, Y. H., et al. Four Years of Monitoring Blazar PKS 2155-304 with *BeppoSAX*: Probing the Dynamics of the Jet.
- CEN, RENYUE. Evolution of the Ionizing Radiation Background and Star Formation in the Aftermath of Cosmological Reionization. *Renyue Cen & Patrick McDonald*. 570, 457 (2002)
- CHABRIER, GILLES. Activity in Very Cool Stars: Magnetic Dissipation in Late M and L Dwarf Atmospheres. *Subhanjoy Mohanty, Gibor Basri, Frank Shu, France Allard, & Gilles Chabrier*. 571, 469 (2002)
- CHAKRABORTY, ABHIJIT. First High-Contrast Imaging Using a Gaussian Aperture Pupil Mask. *John H. Debes, Jian Ge, & Abhijit Chakraborty*. 572, L165 (2002)
- CHALLIS, PETER M. See PUN, CHUN S. J., et al. Modeling the *Hubble Space Telescope* Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- CHANAME, JULIO. Millisecond Pulsars as Probes of Mass Segregation in the Galactic Center. *Julio Chaname & Andrew Gould*. 571, 320 (2002)

- CHANG, TZU-CHING. Shape Reconstruction and Weak Lensing Measurement with Interferometers: A Shapelet Approach. *Tzu-Ching Chang & Alexandre Refregier*. 570, 447 (2002)
- CHAPMAN, S. C. The Influence of Electron Temperature and Magnetic Field Strength on Cosmic-Ray Injection in High Mach Number Shocks. *H. Schmitz, S. C. Chapman, & R. O. Dendy*. 570, 637 (2002)
- Westphal-MMD 11: An Interacting Luminous Lyman Break Galaxy. *S. C. Chapman, A. Shapley, C. Steidel, & R. Windhorst*. 572, L1 (2002)
- CHAPMAN, SCOTT C. Understanding the Nature of the Optically Faint Radio Sources and Their Connection to the Submillimeter Population. *Scott C. Chapman, Geraint F. Lewis, Douglas Scott, Colin Borys, & Eric Richards*. 570, 557 (2002)
- CHARLES, PHILIP A. Infrared Photometric Variability of GX 13+1 and GX 17+2. *Reba M. Bandyopadhyay, Philip A. Charles, Tariq Shahbaz, & R. Mark Wagner*. 570, 793 (2002)
- CHARMANDARIS, V. Resolving the Buried Starburst in Arp 299. *V. Charmandaris, G. J. Stacey, & G. Gull*. 571, 282 (2002)
- CHARTAS, G. A Survey of Extended Radio Jets in Active Galactic Nuclei with *Chandra* and the *Hubble Space Telescope*: First Results. *Rita M. Sambruna, L. Maraschi, F. Tavecchio, C. Megan Urry, C. C. Cheung, G. Chartas, R. Scarpa, & Jessica K. Gambill*. 571, 206 (2002)
- CHATTERJEE, PINAKI. Dynamics of a Massive Black Hole at the Center of a Dense Stellar System. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb*. 572, 371 (2002)
- CHATY, S. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- CHELOUCHE, D. See GEORGE, I. M., et al. The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516.
- CHELOUCHE, DORON. The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra*. 571, 256 (2002)
- CHEN, B. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- CHEN, HSIAO-WEN. The Las Campanas Infrared Survey. III. The *H*-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs. *Hsiao-Wen Chen, P. J. McCarthy, R. O. Marzke, J. Wilson, R. G. Carlberg, A. E. Firth, S. E. Persson, C. N. Sabbey, J. R. Lewis, R. G. McMahon, O. Lahav, R. S. Ellis, P. Martini, R. G. Abraham, A. Oemler, D. C. Murphy, R. S. Somerville, M. G. Beckett, & C. D. Mackay*. 570, 54 (2002)
- The Star Formation Rate Intensity Distribution Function: Implications for the Cosmic Star Formation Rate History of the Universe. *Kenneth A. Lanzetta, Noriaki Yahata, Sebastian Pascarelle, Hsiao-Wen Chen, & Alberto Fernández-Soto*. 570, 492 (2002)
- CHEN, P. F. Evidence of EIT and Moreton Waves in Numerical Simulations. *P. F. Chen, S. T. Wu, K. Shibata, & C. Feng*. 572, L99 (2002)
- CHEUNG, C. C. A Survey of Extended Radio Jets in Active Galactic Nuclei with *Chandra* and the *Hubble Space Telescope*: First Results. *Rita M. Sambruna, L. Maraschi, F. Tavecchio, C. Megan Urry, C. C. Cheung, G. Chartas, R. Scarpa, & Jessica K. Gambill*. 571, 206 (2002)
- CHEVALIER, R. A. See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- CHEVALIER, ROGER A. See PUN, CHUN S. J., et al. Modeling the *Hubble Space Telescope* Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- CHIABERGE, MARCO. The Nuclei of Radio Galaxies in the Ultraviolet: The Signature of Different Emission Processes. *Marco Chiaberge, F. Duccio Macchetto, William B. Sparks, Alessandro Capetti, Mark G. Allen, & André R. Martel*. 571, 247 (2002)
- CHIANG, JAMES. An X-Ray Reprocessing Model of Disk Thermal Emission in Type I Seyfert Galaxies. *James Chiang*. 572, 79 (2002)
- CHIAPPETTI, L. See ZHANG, Y. H., et al. Four Years of Monitoring Blazar PKS 2155–304 with *BeppoSAX*: Probing the Dynamics of the Jet.
- CHIAR, J. E. Hydrocarbons, Ices, and “XCN” in the Line of Sight toward the Galactic Center. *J. E. Chiar, A. J. Adamson, Y. J. Pendleton, D. C. B. Whittier, D. A. Caldwell, & E. L. Gibb*. 570, 198 (2002)
- CHIKAWA, M. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- CHORNOCK, R. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- CHRISTIAN, D. J. See LISSE, C., et al. Discovery of an Extremely Red Object in the Field of HD 155826.
- CHURCHILL, CHRISTOPHER W. The Kinematic Connection between Absorbing Gas toward QSOs and Galaxies at Intermediate Redshift. *Charles C. Steidel, Juna A. Kollmeier, Alice E. Shapley, Christopher W. Churchill, Mark Dickinson, & Max Pettini*. 570, 526 (2002)
- CIARDULLO, ROBIN. Intracluster Red Giant Stars in the Virgo Cluster. *Patrick R. Durrell, Robin Ciardullo, John J. Feldmeier, George H. Jacoby, & Steinn Sigurdsson*. 570, 119 (2002)
- CILIEGI, P. See COMASTRI, A., et al. The HELLAS2 *XMM* Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy.
- CLARK, J. SIMON. An Infrared Ring Nebula around MSX5C G358.5391+00.1305: The True Nature of Suspected Planetary Nebula Wray 17-96 Determined via Direct Imaging and Spectroscopy. *Michael P. Egan, J. Simon Clark, Donald R. Mizuno, Sean J. Carey, Iain A. Steele, & Stephan D. Price*. 572, 288 (2002)
- CLASEN, JACOB W. See HJORTH, JENS, et al. The Time Delay of the Quadruple Quasar RX J0911.4+0551.
- CLINE, T. See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- CLUNE, THOMAS L. Penetration and Overshooting in Turbulent Compressible Convection. *Nicholas H. Brummell, Thomas L. Clune, & Juri Toomre*. 570, 825 (2002)
- COBLE, K. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- COE, M. J. A Decade in the Life of EXO 2030+375: A Multiwavelength Study of an Accreting X-Ray Pulsar. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, Silas Laycock, & J. Fabregat*. 570, 287 (2002)
- COHANIM, BABAK E. Models of Planets and Brown Dwarfs in Mira Winds. *Curtis Struck, Babak E. Cohanin, & Lee Anne Willson*. 572, L83 (2002)
- COHN, HALDAN N. *Hubble Space Telescope*/NICMOS Observations of Terzan 5: Stellar Content and Structure of the Core. *Haldan N. Cohn, Phyllis M. Luger, Jonathan E. Grindlay, & Peter D. Edmonds*. 571, 818 (2002)
- COLE, ANDREW A. The Star Formation History of the Large Magellanic Cloud: Erratum (ApJ, 566, 239 [2002]). *Tammy A. Smecker-Hane, Andrew A. Cole, John S. Gallagher III, & Peter B. Stetson*. 572, 1083 (2002) (Orig. paper in 566, 239 (2002))
- COLLMAR, W. See MCCONNELL, M. L., et al. The Soft Gamma-Ray Spectral Variability of Cygnus X-1.
- COLPI, MONICA. The Case of PSR J1911–5958A in the Outskirts of NGC 6752: Signature of A Black Hole Binary in the Cluster Core? *Monica Colpi, Andrea Possenti, & Alessia Gualandris*. 570, L85 (2002)
- COMASTRI, A. See LA FRANCA, F., et al. The *BeppoSAX* High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution.
- The HELLAS2 *XMM* Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy. *A. Comastri, M. Mignoli, P. Ciliegi, P. Severgnini, R. Maiolino, M. Brusa, F. Fiore, A. Baldi, S. Molendi, R. Morganti, C. Vignali, F. La Franca, G. Matt, & G. C. Perola*. 571, 771 (2002)
- COMERON, F. A Young Very Low Mass Object Surrounded by Warm Dust. *L. Testi, A. Natta, E. Oliva, F. D’Antona, F. Comeron, C. Baffa, G. Comoretto, & S. Gennari*. 571, L155 (2002)
- COMORETTO, G. A Young Very Low Mass Object Surrounded by Warm Dust. *L. Testi, A. Natta, E. Oliva, F. D’Antona, F. Comeron, C. Baffa, G. Comoretto, & S. Gennari*. 571, L155 (2002)
- CONNAUGHTON, V. Extended Power-Law Decays in BATSE Gamma-Ray Bursts: Signatures of External Shocks? *T. W. Glibin, V. Connaughton, J. van Paradijs, R. D. Preece, M. S. Briggs, C. Kouveliotou, R. A. M. J. Wijers, & G. J. Fishman*. 570, 572 (2002)
- CONNOLLY, ANDREW. See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- CONNOLLY, ANDREW J. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.

- CONNORS, ALANNA. Statistics, Handle with Care: Detecting Multiple Model Components with the Likelihood Ratio Test. *Rostislav Protosov, David A. van Dyk, Alanna Connors, Vinay L. Kashyap, & Aneta Siemiginowska*. 571, 545 (2002)
- CONTALDI, C. R. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- CONTINI, M. The Interpretation of the Emission Spectra of the Seyfert 2 Galaxy NGC 7130: Determination of the Active Galactic Nucleus and Starburst Contributions. *M. Contini, M. Radovich, P. Rafanelli, & G. M. Richter*. 572, 124 (2002)
- CORBETT, E. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- CORCORAN, M. F. Australia Telescope Compact Array Radio Imaging of the Proplyd-like Objects in the Giant H II Region NGC 3603. *A. Mücke, B. S. Koribalski, A. F. J. Moffat, M. F. Corcoran, & I. R. Stevens*. 571, 366 (2002)
- CORDOVA, FRANCE A. On the X-Ray Source Luminosity Distributions in the Bulge and Disk of M31: First Results from the *XMM-Newton* Survey. *Sergey P. Trudolyubov, Konstantin N. Borozdin, William C. Priedhorsky, Keith O. Mason, & France A. Cordova*. 571, L17 (2002)
- COSTA, E. See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 01121.
- COTERA, A. Detection of X-Ray Emission from the Arches Cluster near the Galactic Center. *F. Yusef-Zadeh, C. Law, M. Wardle, Q. D. Wang, A. Fruscione, C. C. Lang, & A. Cotera*. 570, 665 (2002)
- COUDERT, L. H. Detection of Triply Deuterated Ammonia in the Barbad 1 Cloud. *D. C. Lis, E. Roueff, M. Gerin, T. G. Phillips, L. H. Coudert, F. F. S. van der Tak, & P. Shihe*. 571, L55 (2002)
- Interstellar Antifreeze: Ethylene Glycol. *J. M. Hollis, F. J. Lovas, P. R. Jewell, & L. H. Coudert*. 571, L59 (2002)
- COWAN, JOHN J. The Chemical Composition and Age of the Metal-poor Halo Star BD +17°3248. *John J. Cowan, Christopher Sneden, Scott Burles, Inese I. Ivans, Timothy C. Beers, James W. Truran, James E. Lawler, Francesca Primas, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz*. 572, 861 (2002)
- CRAIG, I. J. D. Particle Acceleration Scalings Based on Exact Analytic Models for Magnetic Reconnection. *I. J. D. Craig & Yuri E. Litvinenko*. 570, 387 (2002)
- CRAMPTON, DAVID. The Gravitational Lens CFRS 03.1077. *David Crampton, David Schade, F. Hammer, A. Matzkin, S. J. Lilly, & O. Le Fèvre*. 570, 86 (2002)
- CRARY, FRANK J. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- CREECH-EAKMAN, M. J. Time-dependent Asymmetries in the Atmosphere of the Mira Variable R Trianguli through Infrared Interferometry. *R. R. Thompson, M. J. Creech-Eakman, & R. L. Akeson*. 570, 373 (2002)
- CRENSHAW, D. M. The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra*. 571, 256 (2002)
- See GEORGE, I. M., et al. The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516.
- CREW, G. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- CRILL, B. P. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- CROCKER, M. M. The Central Binary and Surrounding Nebula of the Symbiotic Star V1016 Cygni. *C. Brocksopp, M. F. Bode, S. P. S. Eyres, M. M. Crocker, R. Davis, & A. R. Taylor*. 571, 947 (2002)
- CROOM, S. M. Discovery of Radio-loud Broad Absorption Line Quasars Using Ultraviolet Excess and Deep Radio Selection: Erratum (ApJ, 505, L17 [1998]). *M. S. Brotherton, W. van Breugel, R. J. Smith, B. J. Boyle, T. Shanks, S. M. Croom, L. Miller, & R. H. Becker*. 571, L191 (2002)
- CROTTIS, ARLIN P. S. Evolution and Geometry of Hot Spots in Supernova Remnant 1987A. *Ben E. K. Sugerman, Stephen S. Lawrence, Arlin P. S. Crotts, Patrice Bouchet, & Steve R. Heathcote*. 572, 209 (2002)
- CRUZ-GONZÁLEZ, IRENE. Flux-Velocity Relation for H<sub>2</sub> Outflows. *Luis Salas & Irene Cruz-González*. 572, 227 (2002)
- CSABAI, I. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- CSABAI, ISTVÁN. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See MCKAY, TIMOTHY A., et al. Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- CUI, W. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- CUNTZ, M. Orbital Stability of Terrestrial Planets inside the Habitable Zones of Extrasolar Planetary Systems. *M. Noble, Z. E. Musielak, & M. Cuntz*. 572, 1024 (2002)
- DADO, SHLOMO. Is There a 1998bw-like Supernova in the Afterglow of Gamma-Ray Burst 01121? *Shlomo Dado, Arnon Dar, & A. De Rújula*. 572, L143 (2002)
- DAHN, CONRAD C. Evidence of Cloud Disruption in the L/T Dwarf Transition. *Adam J. Burgasser, Mark S. Marley, Andrew S. Ackerman, Didier Saumon, Katharina Lodders, Conrad C. Dahn, Hugh C. Harris, & J. Davy Kirkpatrick*. 571, L151 (2002)
- DALAL, N. Direct Detection of Cold Dark Matter Substructure. *N. Dalal & C. S. Kochanek*. 572, 25 (2002)
- DALCANTON, JULIANNE J. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- D'ALESSIO, PAOLA. Discovery of an Edge-On Disk in the MBM 12 Young Association. *Ray Jayawardhana, K. L. Luhman, Paola D'Alessio, & John R. Stauffer*. 571, L51 (2002)
- DALGARNO, ALEXANDER. Rotational and Vibrational Excitation of CO Molecules by Collisions with <sup>4</sup>He Atoms. *Cesare Cecchi-Pestellini, Enrico Bodo, N. Balakrishnan, & Alexander Dalgarno*. 571, 1015 (2002)
- D'AMICO, N. Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian*. 570, L89 (2002)
- D'ANTONA, F. A Young Very Low Mass Object Surrounded by Warm Dust. *L. Testi, A. Natta, E. Oliva, F. D'Antona, F. Comerón, C. Baffa, G. Comoretto, & S. Gennari*. 571, L155 (2002)
- DAR, ARNON. Is There a 1998bw-like Supernova in the Afterglow of Gamma-Ray Burst 01121? *Shlomo Dado, Arnon Dar, & A. De Rújula*. 572, L143 (2002)
- DARLING, JEREMY. The OH Megamaser Luminosity Function. *Jeremy Darling & Riccardo Giovanelli*. 572, 810 (2002)
- DAS, D. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- DAVÉ, ROMEEL. The Growth of Galaxies in Cosmological Simulations of Structure Formation. *Chigurupati Murali, Neal Katz, Lars Hernquist, David H. Weinberg, & Romeel Davé*. 571, 1 (2002)
- DAVIS, DAVID S. Chandra Detection of O VIII Ly $\alpha$  Absorption from an Overdense Region in the Intergalactic Medium. *Taotao Fang, Herman L. Marshall, Julia C. Lee, David S. Davis, & Claude R. Canizares*. 572, L127 (2002)
- DAVIS, R. The Central Binary and Surrounding Nebula of the Symbiotic Star V1016 Cygni. *C. Brocksopp, M. F. Bode, S. P. S. Eyres, M. M. Crocker, R. Davis, & A. R. Taylor*. 571, 947 (2002)
- DAW, E. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- DAWSON, STEVE. A Galactic Wind at  $z = 5.190$ . *Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Dey, Wil van Breugel, Win de Vries, & Michiel Reuland*. 570, 92 (2002)
- DEÁK, F. See HORVÁTH, Á., et al. Cross Section for the Astrophysical <sup>14</sup>C( $n$ ,  $\gamma$ )<sup>15</sup>C Reaction via the Inverse Reaction.
- DE BERNARDIS, P. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.

- DEBES, JOHN H. Are There Unstable Planetary Systems around White Dwarfs? *John H. Debes & Steinn Sigurdsson*. 572, 556 (2002)
- First High-Contrast Imaging Using a Gaussian Aperture Pupil Mask. *John H. Debes, Jian Ge, & Abhijit Chakraborty*. 572, L165 (2002)
- DE GASPERIS, G. See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- DE KOOL, MARTIJN. Keck HIRES Spectroscopy of the Fe II Low-Ionization Broad Absorption Line FBQS 0840+3633: Evidence for Two Outflows on Different Scales. *Martijn de Kool, Robert H. Becker, Nahum Arav, Michael D. Gregg, & Richard L. White*. 570, 514 (2002)
- DE LA CALLE PEREZ, I. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- D'ELIA, V. The Blazar Main Sequence. *A. Cavaliere & V. D'Elia*. 571, 226 (2002)
- DENDY, R. O. The Influence of Electron Temperature and Magnetic Field Strength on Cosmic-Ray Injection in High Mach Number Shocks. *H. Schmitz, S. C. Chapman, & R. O. Dendy*. 570, 637 (2002)
- DENG, J. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- DENT, WILLIAM R. F. New Submillimeter Limits on Dust in the 55 Cancri Planetary System. *Ray Jayawardhana, Wayne S. Holland, Paul Kalas, Jane S. Greaves, William R. F. Dent, Mark C. Wyatt, & Geoffrey W. Marcy*. 570, L93 (2002)
- DEPOY, D. L. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- DE ROPE, Y. See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- DE TROIA, G. See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- DE VRIES, WIN. A Galactic Wind at  $z = 5.190$ . *Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Dey, Wil van Breugel, Win de Vries, & Michiel Reuland*. 570, 92 (2002)
- DEY, ARJUN. A Galactic Wind at  $z = 5.190$ . *Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Dey, Wil van Breugel, Win de Vries, & Michiel Reuland*. 570, 92 (2002)
- DEZALAY, J. P. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- DHAWAN, V. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- DIAMOND, P. H. On the Possible Reason for Nondetection of TeV Protons in Supernova Remnants. *M. A. Malkov, P. H. Diamond, & T. W. Jones*. 571, 856 (2002)
- DICKENS, J. E. Survey Observations of c-C<sub>2</sub>H<sub>4</sub>O and CH<sub>3</sub>CHO toward Massive Star-forming Regions: Erratum (ApJ, 560, 792 [2001]). *M. Ikeda, M. Ohishi, A. Nummelin, J. E. Dickens, P. Bergman, Å. Hjalmarson, & W. M. Irvine*. 571, 560 (2002) (Orig. paper in 560, 792 (2001))
- DICKINSON, MARK. The Kinematic Connection between Absorbing Gas toward QSOs and Galaxies at Intermediate Redshift. *Charles C. Steidel, Juna A. Kollmeier, Alice E. Shapley, Christopher W. Churchill, Mark Dickinson, & Max Pettini*. 570, 526 (2002)
- DI STEFANO, R. Bright X-Ray Sources in M31 Globular Clusters. *R. Di Stefano, A. K. H. Kong, M. R. Garcia, P. Barmby, J. Greiner, S. S. Murray, & F. A. Primini*. 570, 618 (2002)
- DIJORGOSKI, S. G. See LISSE, C., et al. Discovery of an Extremely Red Object in the Field of HD 155826.
- See PRICE, P. A., et al. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow.
- See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 01121.
- See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- DOBRYZKY, ADAM. Chandra Discovery of a 300 Kiloparsec X-Ray Jet in the Gigahertz-peaked Spectrum Quasar PKS 1127–145. *Aneta Siemiginowska, Jill Bechtold, Thomas L. Aldcroft, Martin Elvis, D. E. Harris, & Adam Dobrzycki*. 570, 543 (2002)
- A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . IV. The Clustering and Evolution of Clouds at  $z \leq 1.7$ . *Adam Dobrzycki, Jill Bechtold, Jennifer Scott, & Miwa Morita*. 571, 654 (2002)
- A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . V. The Extragalactic Ionizing Background at Low Redshift. *Jennifer Scott, Jill Bechtold, Miwa Morita, Adam Dobrzycki, & Varsha P. Kulkarni*. 571, 665 (2002)
- DODELSON, SCOTT. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data. *Scott Dodelson, Vijay K. Narayanan, Max Tegmark, Ryan Scranton, Tamas Budavári, Andrew Connolly, Istvan Csabai, Daniel Eisenstein, Joshua A. Frieman, James E. Gunn, Lam Hui, Bhuvnesh Jain, David Johnston, Stephen Kent, Jon Loveday, Robert C. Nichol, Liam O'Connell, Roman Scoccimarro, Ravi K. Sheth, Albert Stebbins, Michael A. Strauss, Alexander S. Szalay, István Szapudi, Michael S. Vogeley, Idit Zehavi, James Annis, Neta A. Bahcall, Jon Brinkman, Mamoru Doi, Masataka Fukugita, Greg Hennessy, Željko Ivezić, Gillian R. Knapp, Peter Kunszt, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York*. 572, 140 (2002)
- DOGIEL, V. A. The Cosmic-Ray Luminosity of the Galaxy. *V. A. Dogiel, V. Schönfelder, & A. W. Strong*. 572, L157 (2002)
- DOI, M. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- DOI, MAMORU. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- DOKTER, JON J. A Critical Examination of Li Pollution and Giant-Planet Consumption by a Host Star. *Eric L. Sandquist, Jon J. Dokter, D. N. C. Lin, & Rosemary A. Marling*. 572, 1012 (2002)
- DOMINIK, M. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- DONAGHY, T. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- DONZELLI, CARLOS J. The O I Line Emission in Active Galactic Nuclei Revisited. *A. Rodríguez-Ardila, S. M. Viegas, M. G. Pastoriza, L. Prato, & Carlos J. Donzelli*. 572, 94 (2002)
- DOPITA, MICHAEL A. Are the Narrow-Line Regions in Active Galaxies Dusty and Radiation Pressure Dominated? *Michael A. Dopita, Brent A. Groves, Ralph S. Sutherland, Luc Binette, & Gerald Cecil*. 572, 753 (2002)
- DOSAJ, ANIL. See GREEN, PAUL J., et al. Chandra Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens?
- DOTANI, TADAYASU. Very Low Luminosities from the Accretion-driven Millisecond X-Ray Pulsar SAX J1808.4–3658 during Quiescence. *Rudy Wijnands, Lucien Kuiper, Jean in 't Zand, Tadayasu Dotani, Michiel van der Klis, & John Heise*. 571, 429 (2002)
- DOTY, J. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- DOTY, J. P. See MAEDA, Y., et al. A Chandra Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center?
- DRAINE, B. T. Do the Infrared Emission Features Need Ultraviolet Excitation? The Polycyclic Aromatic Hydrocarbon Model in UV-poor Reflection Nebulae. *Aigen Li & B. T. Draine*. 572, 232 (2002)
- DRAKE, JEREMY J. Is RX J1856.5–3754 a Quark Star? *Jeremy J. Drake, Herman L. Marshall, Stefan Dreizler, Peter E. Freeman, Antonella Fruscione, Michael Juda, Vinay Kasyap, Fabrizio Nicastro, Deron O. Pease, Bradford J. Wargelin, & Klaus Werner*. 572, 996 (2002)
- DREIZLER, STEFEN. See DRAKE, JEREMY J., et al. Is RX J1856.5–3754 a Quark Star?
- DREW, JANET E. Resonance Line Profile Calculations Based on Hydrodynamical Models of Cataclysmic Variable Winds. *Daniel Proga, Timothy R. Kallman, Janet E. Drew, & Louise E. Hartley*. 572, 382 (2002)
- DULTZIN-HACYAN, D. The Circumgalactic Environment of Bright IRAS Galaxies. *Y. Krongold, D. Dultzin-Hacyan, & P. Marziani*. 572, 169 (2002)



- DUNCAN, G. COMER. Three-dimensional Hydrodynamic Simulations of Relativistic Extragalactic Jets. *Philip A. Hughes, Mark A. Miller, & G. Comer Duncan*. 572, 713 (2002)
- DUNLEA, S. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- DUPREE, A. K. Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree*. 570, 799 (2002)
- DUROUCHOUX, P. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- DURRELL, PATRICK R. Intracluster Red Giant Stars in the Virgo Cluster. *Patrick R. Durrell, Robin Ciardullo, John J. Feldmeier, George H. Jacoby, & Steinn Sigurdsson*. 570, 119 (2002)
- D'VALI, M. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- EBISAWA, K. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- ECKHARDT, DONALD H. Technique for Modeling the Gravitational Field of a Galactic Disk. *Donald H. Eckhardt & José Luis G. Pestaña*. 572, L135 (2002)
- EDMONDS, PETER D. *Hubble Space Telescope/NICMOS* Observations of Terzan 5: Stellar Content and Structure of the Core. *Haldan N. Cohn, Phyllis M. Lugger, Jonathan E. Grindlay, & Peter D. Edmonds*. 571, 818 (2002)
- EGAN, MICHAEL P. An Infrared Ring Nebula around MSX5C G358.5391+00.1305: The True Nature of Suspected Planetary Nebula Wray 17-96 Determined via Direct Imaging and Spectroscopy. *Michael P. Egan, J. Simon Clark, Donald R. Mizuno, Sean J. Carey, Iain A. Steele, & Stephan D. Price*. 572, 288 (2002)
- EHLE, M. See MILLER, J. M., et al. Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the *XMM-Newton*/EPIC-pn Spectrum of XTE J1650-500.
- EISENSTEIN, DANIEL. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- EISENSTEIN, DANIEL J. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- ELITZUR, MOSHE. Dust Emission from Active Galactic Nuclei. *Maia Nenkova, Željko Ivezić, & Moshe Elitzur*. 570, L9 (2002)
- ELLIS, R. S. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The *H*-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- ELSNER, RONALD F. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus. *Ronald F. Elsner, G. Randall Gladstone, J. Hunter Waite, Frank J. Cray, Robert R. Howell, Robert E. Johnson, Peter G. Ford, Albert E. Metzger, Kevin C. Hurley, Eric D. Feigelson, Gordon P. Garmire, Anil Bhardwaj, Denis C. Grodent, Tariq Majeed, Allyn F. Tennant, & Martin C. Weisskopf*. 572, 1077 (2002)
- ELVIS, M. Ubiquitous Variability of X-Ray-absorbing Column Densities in Seyfert 2 Galaxies. *G. Risaliti, M. Elvis, & F. Nicastro*. 571, 234 (2002)
- ELVIS, MARTIN. *Chandra* Discovery of a 300 Kiloparsec X-Ray Jet in the Gigahertz-peaked Spectrum Quasar PKS 1127-145. *Aneta Siemiginowska, Jill Bechtold, Thomas L. Aldcroft, Martin Elvis, D. E. Harris, & Adam Dobrzycki*. 570, 543 (2002)
- ENGEL, RALPH. Ultrahigh-Energy Cosmic-Ray Propagation in the Galaxy: Clustering versus Isotropy. *Jaime Alvarez-Muñiz, Ralph Engel, & Todor Stanev*. 572, 185 (2002)
- ENGLMAIER, PETER. Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogee, Johan H. Knapen, Seppo Laine, Issac Shlosman, Nick Z. Scoville, & Peter Englmaier*. 570, L55 (2002)
- ENYA, K. See MAZZALI, P. A., et al. The Type Ic Supernova SN 2002ap.
- ERACLEOUS, M. EG J2016+3657: Confirming an EGRET Blazar behind the Galactic Plane: Erratum (ApJ, 551, 1016 [2001]). *J. P. Halpern, M. Eracleous, R. Mukherjee, & E. V. Gotthelf*. 572, 693 (2002) (Orig. paper in 551, 1016 (2001))
- EVANS, MICHAEL L. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- EYRES, S. P. S. The Central Binary and Surrounding Nebula of the Symbiotic Star V1016 Cygni. *C. Brocksopp, M. F. Bode, S. P. S. Eyres, M. M. Crocker, R. Davis, & A. R. Taylor*. 571, 947 (2002)
- FABER, S. M. See IM, MYUNGSHIN, et al. The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ .
- FABIAN, A. C. See MILLER, J. M., et al. Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the *XMM-Newton*/EPIC-pn Spectrum of XTE J1650-500.
- FABIAN, ANDREW C. The Shape of the Relativistic Iron K $\alpha$  Line from MCG -6-30-15 Measured with the *Chandra* High Energy Transmission Grating Spectrometer and the *Ross X-Ray Timing Explorer*. *Julia C. Lee, Kazushi Iwasawa, John C. Houck, Andrew C. Fabian, Herman L. Marshall, & Claude R. Canizares*. 570, L47 (2002)
- See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- FABREGAT, J. A Decade in the Life of EXO 2030+375: A Multiwavelength Study of an Accreting X-Ray Pulsar. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, Silas Laycock, & J. Fabregat*. 570, 287 (2002)
- FALCKE, HEINO. The Spectrum and Variability of Circular Polarization in Sagittarius A from 1.4 to 15 GHz. *Geoffrey C. Bower, Heino Falcke, Robert J. Sault, & Donald C. Backer*. 571, 843 (2002)
- FALCO, E. E. See LEHAR, J., et al. *Hubble Space Telescope* Observations of 10 Two-Image Gravitational Lenses: Erratum (ApJ, 536, 584 [2002]).
- FAN, Y. Quiescent Solar Prominences and Magnetic-Energy Storage. *B. Fong, B. C. Low, & Y. Fan*. 571, 987 (2002)
- FANG, TAOTAO. *Chandra* Detection of O VIII Ly $\alpha$  Absorption from an Overdense Region in the Intergalactic Medium. *Taotao Fang, Herman L. Marshall, Julia C. Lee, David S. Davis, & Claude R. Canizares*. 572, L127 (2002)
- FARESE, P. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- FARGION, D. Discovering Ultra-High-Energy Neutrinos through Horizontal and Upward  $\tau$  Air Showers: Evidence in Terrestrial Gamma Flashes? *D. Fargion*. 570, 909 (2002)
- FATUZZO, MARCO. Enhancement of Ambipolar Diffusion Rates through Field Fluctuations. *Marco Fatuzzo & Fred C. Adams*. 570, 210 (2002)
- FEAGA, LORI M. The Abundance of Atomic Sulfur in the Atmosphere of Io. *Lori M. Feaga, Melissa A. McGrath, & Paul D. Feldman*. 570, 439 (2002)
- FEDERMAN, S. R. High-Resolution Measurements of Intersystem Bands of Carbon Monoxide toward X Persei. *Yaron Sheffer, S. R. Federman, & David L. Lambert*. 572, L95 (2002)
- FEGAN, D. J. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- FEGAN, S. J. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- FEIGELSON, E. D. See MAEDA, Y., et al. A *Chandra* Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center?
- FEIGELSON, ERIC D. Magnetic Flaring in the Pre-Main-Sequence Sun and Implications for the Early Solar System. *Eric D. Feigelson, Gordon P. Garmire, & Steven H. Pravdo*. 572, 335 (2002)
- See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- FELDMAN, PAUL D. The Abundance of Atomic Sulfur in the Atmosphere of Io. *Lori M. Feaga, Melissa A. McGrath, & Paul D. Feldman*. 570, 439 (2002)
- FELDMER, JOHN J. Intracluster Red Giant Stars in the Virgo Cluster. *Patrick R. Durrell, Robin Ciardullo, John J. Feldmeier, George H. Jacoby, & Steinn Sigurdsson*. 570, 119 (2002)
- FENG, C. Evidence of EIT and Moreton Waves in Numerical Simulations. *P. F. Chen, S. T. Wu, K. Shibata, & C. Feng*. 572, L99 (2002)
- FENIMORE, E. See PRICE, P. A., et al. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow.
- See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- FENNER, YESHE. A Limit on the Metallicity of Compact High-Velocity Clouds. *Kenneth R. Sembach, Brad K. Gibson, Yeshe Fenner, & Mary E. Putman*. 572, 178 (2002)
- FERGUSON, A. M. P. On the Progenitor of the Type Ic Supernova 2002ap. *S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen*. 572, L147 (2002)

- FERLET, R. Hydrogen Column Density Evaluations toward Capella: Consequences on the Interstellar Deuterium Abundance. *A. Vidal-Madjar & R. Ferlet*. 571, L169 (2002)
- FERNANDEZ, Y. See LISSE, C., et al. Discovery of an Extremely Red Object in the Field of HD 155826.
- FERNÁNDEZ-SOTO, ALBERTO. The Star Formation Rate Intensity Distribution Function: Implications for the Cosmic Star Formation Rate History of the Universe. *Kenneth A. Lanzetta, Noriaki Yahata, Sebastian Pascarelle, Hsiao-Wen Chen, & Alberto Fernández-Soto*. 570, 492 (2002)
- FEROCI, M. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- FERRARA, A. First Stars, Very Massive Black Holes, and Metals. *R. Schneider, A. Ferrara, P. Natarajan, & K. Omukai*. 571, 30 (2002)
- FERRARA, ANDREA. Early Metal Enrichment by Pregalactic Outflows. II. Three-dimensional Simulations of Blow-Away. *Masao Mori, Andrea Ferrara, & Piero Madau*. 571, 40 (2002)
- On the Direct Detectability of the Cosmic Dark Ages: 21 Centimeter Emission from Minihalos. *Ilian T. Iliev, Paul R. Shapiro, Andrea Ferrara, & Hugo Martel*. 572, L123 (2002)
- FERRARO, FRANCESCO R. ISOCAM Observations of Galactic Globular Clusters: Mass Loss along the Red Giant Branch. *Livia Origlia, Francesco R. Ferraro, Flavio Fusi Pecci, & Robert T. Rood*. 571, 458 (2002)
- FESEN, R. See MAZZALI, P. A., et al. The Type Ic Hypervnova SN 2002ap.
- FICI, L. Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian*. 570, L89 (2002)
- FIELD, GEORGE B. Dynamical Quenching of the  $\alpha^2$  Dynamo. *George B. Field & Eric G. Blackman*. 572, 685 (2002)
- FILIPPENKO, A. V. See MAZZALI, P. A., et al. The Type Ic Hypervnova SN 2002ap.
- FILIPPENKO, ALEXEI V. See PUN, CHUN S. J., et al. Modeling the *Hubble Space Telescope* Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- FINGER, MARK H. A Decade in the Life of EXO 2030+375: A Multiwavelength Study of an Accreting X-Ray Pulsar. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, Silas Laycock, & J. Fabregat*. 570, 287 (2002)
- FINKBEINER, DOUGLAS P. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- FINLEY, J. P. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- FIORIO, F. See LA FRANCA, F., et al. The *BeppoSAX* High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution.
- See COMASTRI, A., et al. The *HELLAS2 XMM* Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy.
- FIRTH, A. E. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The *H*-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- FISCHER, DEBRA A. Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. *Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler*. 571, 519 (2002)
- FISHMAN, G. J. Extended Power-Law Decays in BATSE Gamma-Ray Bursts: Signatures of External Shocks? *T. W. Giblin, V. Connaughton, J. van Paradijs, R. D. Preece, M. S. Briggs, C. Kouveliotou, R. A. M. J. Wijers, & G. J. Fishman*. 570, 572 (2002)
- FOCKE, WARREN. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65.
- FONG, B. Quiescent Solar Prominences and Magnetic-Energy Storage. *B. Fong, B. C. Low, & Y. Fan*. 571, 987 (2002)
- FONTENLA, J. M. Energy Balance in the Solar Transition Region. IV. Hydrogen and Helium Mass Flows with Diffusion. *J. M. Fontenla, E. H. Avrett, & R. Loeser*. 572, 636 (2002)
- FORD, PETER G. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- FOSSATI, G. See ZHANG, Y. H., et al. Four Years of Monitoring Blazar PKS 2155–304 with *BeppoSAX*: Probing the Dynamics of the Jet.
- FOX, D. W. See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- FOX, D. W. See PRICE, P. A., et al. GRB 010921: Discovery of the First *High Energy Transient Explorer* Afterglow.
- See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- FOX, DEREK W. See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- FRAIL, D. A. See PRICE, P. A., et al. GRB 010921: Discovery of the First *High Energy Transient Explorer* Afterglow.
- See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- FRANCO, JOSÉ. The Parker Instability in Three Dimensions: Corrugations and Superclouds along the Carina-Sagittarius Arm. *José Franco, Jongsoo Kim, Emilio J. Alfaro, & Seung Soo Hong*. 570, 647 (2002)
- FRANSSON, CLAES. See PUN, CHUN S. J., et al. Modeling the *Hubble Space Telescope* Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- FRAZIN, RICHARD A. Tomography of the Solar Corona. I. Robust, Regularized, Positive Estimation of the Three-dimensional Electron Density Distribution from LASCO-C2 Polarized White-Light Images. *Richard A. Frazin & Paul Janzen*. 570, 408 (2002)
- FREEDMAN, WENDY L. The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. I. Results. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore*. 571, 56 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. II. Measurement of Foreground Zodiacal Light. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore*. 571, 85 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. III. Cosmological Implications. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore*. 571, 107 (2002)
- FREEMAN, PETER E. See DRAKE, JEREMY J., et al. Is RX J1856.5–3754 a Quark Star?
- FREGEAU, J. M. Mass Segregation in Globular Clusters. *J. M. Fregeau, K. J. Joshi, S. F. Portegies Zwart, & F. A. Rasio*. 570, 171 (2002)
- FREYBERG, M. J. See MILLER, J. M., et al. Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the *XMM-Newton*/EPIC-pn Spectrum of XTE J1650–500.
- FRIEDMAN, SCOTT. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- FRIEMAN, JOSHUA A. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- FRITZ, GILBERT G. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65.
- FRONTERA, F. See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- FRUSCIONE, A. Detection of X-Ray Emission from the Arches Cluster near the Galactic Center. *F. Yusef-Zadeh, C. Law, M. Wardle, Q. D. Wang, A. Fruscione, C. C. Lang, & A. Cotera*. 570, 665 (2002)
- FRUSCIONE, ANTONELLA. See DRAKE, JEREMY J., et al. Is RX J1856.5–3754 a Quark Star?
- FUKUGITA, MASATAKA. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- FUKUGITA, MASATAKA. See MCKAY, TIMOTHY A., et al. Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws.
- FUKUMURA, KEIGO. Magnetohydrodynamic Shock Conditions for Accreting Plasma onto Kerr Black Holes. I. *Masaaki Takahashi, Darrell Riettt, Keigo Fukumura, & Sachiko Tsuruta*. 572, 950 (2002)

- FUKUSHIMA, M. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- FULLER, GEORGE M. See COWAN, JOHN J., et al. The Chemical Composition and Age of the Metal-poor Halo Star BD +17°3248.
- FURLANETTO, STEVEN R. Emission of Positron Annihilation Line Radiation by Clusters of Galaxies. *Steven R. Furlanetto & Abraham Loeb*. 572, 796 (2002)
- FUSI PECCI, FLAVIO. ISOCAM Observations of Galactic Globular Clusters: Mass Loss along the Red Giant Branch. *Livia Origlia, Francesco R. Ferraro, Flavio Fusi Pecci, & Robert T. Rood*. 571, 458 (2002)
- FUTAMASE, TOSHIKUMI. Lognormal Property of Weak-Lensing Fields. *Atsushi Taruya, Masahiro Takada, Takashi Hamana, Issha Kayo, & Toshifumi Futamase*. 571, 638 (2002)
- GAENSLER, BRYAN M. A Deep Search for Pulsations from the Nearby Isolated Neutron Star RX J1856.5–3754. *Scott M. Ransom, Bryan M. Gaensler, & Patrick O. Slane*. 570, L75 (2002)
- GAIDOS, J. A. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- GALAMA, T. J. See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011211. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- GALASSI, M. See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- GALLAGHER, J. S., III. Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Otte, J. S. Gallagher III, & R. J. Reynolds*. 572, 823 (2002)
- GALLAGHER, JOHN S., III. The Star Formation History of the Large Magellanic Cloud: Erratum (ApJ, 566, 239 [2002]). *Tammy A. Smecker-Hane, Andrew A. Cole, John S. Gallagher III, & Peter B. Stetson*. 572, 1083 (2002) (Orig. paper in 566, 239 (2002))
- GALLAGHER, PETER T. Electron Transport during the 1999 August 20 Flare Inferred from Microwave and Hard X-Ray Observations. *Jeongwoo Lee, Dale E. Gary, Jiong Qiu, & Peter T. Gallagher*. 572, 609 (2002)
- GALLEGO, J. The [O II]  $\lambda$ 3727 Luminosity Function of the Local Universe. *J. Gallego, C. E. García-Dabó, J. Zamorano, A. Argón-Salamanca, & M. Rego*. 570, L1 (2002)
- GALONSKY, A. See HORVÁTH, Á., et al. Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction.
- GAMBILL, JESSICA K. A Survey of Extended Radio Jets in Active Galactic Nuclei with *Chandra* and the *Hubble Space Telescope*: First Results. *Rita M. Sambruna, L. Maraschi, F. Tavecchio, C. Megan Urry, C. C. Cheung, G. Chartas, R. Scarpa, & Jessica K. Gambill*. 571, 206 (2002)
- GANGA, K. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background. See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- GARAY, G. The Nature of the Cluster of Radio Sources in GGD 14. *Y. Gómez, L. F. Rodríguez, & G. Garay*. 571, 901 (2002)
- GARCIA, M. R. Bright X-Ray Sources in M31 Globular Clusters. *R. Di Stefano, A. K. H. Kong, M. R. Garcia, P. Barmby, J. Greiner, S. S. Murray, & F. A. Primini*. 570, 618 (2002)
- GARCIA, MICHAEL R. The X-Ray Spectra of Black Hole X-Ray Novae in Quiescence as Measured by *Chandra*. *Albert K. H. Kong, Jeffrey E. McClintock, Michael R. Garcia, Stephen S. Murray, & Didier Barret*. 570, 277 (2002)
- GARCÍA-DABÓ, C. E. The [O II]  $\lambda$ 3727 Luminosity Function of the Local Universe. *J. Gallego, C. E. García-Dabó, J. Zamorano, A. Argón-Salamanca, & M. Rego*. 570, L1 (2002)
- GARCÍA-SEGURA, GUILLERMO. The Dynamical Evolution of the Circumstellar Gas around Low- and Intermediate-Mass Stars. I. The Asymptotic Giant Branch. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado*. 571, 880 (2002)
- GARMIRE, G. P. See MAEDA, Y., et al. A *Chandra* Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center? *Chandra* Observations of the Lensing Cluster EMSS 1358+6245: Implications for Self-interacting Dark Matter. *J. S. Arabadjis, M. W. Bautz, & G. P. Garmire*. 572, 66 (2002)
- GARMIRE, GORDON P. Magnetic Flaring in the Pre-Main-Sequence Sun and Implications for the Early Solar System. *Eric D. Feigelson, Gordon P. Garmire, & Steven H. Pravdo*. 572, 335 (2002)
- See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- GARRINGTON, S. T. MERLIN Radio Detection of an Interaction Zone within a Binary Orion Proplyd System. *M. F. Graham, J. Meaburn, S. T. Garrington, T. J. O'Brien, W. J. Henney, & C. R. O'Dell*. 570, 222 (2002)
- GARVAVICH, PETER M. See PUN, CHUN S. J., et al. Modeling the *Hubble Space Telescope* Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- GARY, DALE E. The Peak Flux Distribution of Solar Radio Bursts. *Gelu M. Nita, Dale E. Gary, L. J. Lanzetta, & D. J. Thomson*. 570, 423 (2002)
- Electron Transport during the 1999 August 20 Flare Inferred from Microwave and Hard X-Ray Observations. *Jeongwoo Lee, Dale E. Gary, Jiong Qiu, & Peter T. Gallagher*. 572, 609 (2002)
- GASTALDELLO, FABIO. Abundance Gradients and the Role of Supernovae in M87. *Fabio Gastaldello & Silvano Molendo*. 572, 160 (2002)
- GAUDI, B. S. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5. See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- GE, JIAN. Fixed Delay Interferometry for Doppler Extrasolar Planet Detection. *Jian Ge*. 571, L165 (2002)
- First High-Contrast Imaging Using a Gaussian Aperture Pupil Mask. *John H. Debes, Jian Ge, & Abhijit Chakraborty*. 572, L165 (2002)
- GERHARDT, KARL. See IM, MYUNGSHIN, et al. THE DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ .
- GEHRELS, N. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- GENNARI, S. A Young Very Low Mass Object Surrounded by Warm Dust. *L. Testi, A. Natta, E. Oliva, F. D'Antona, F. Comerón, C. Baffa, G. Comoretto, & S. Gennari*. 571, L155 (2002)
- GEORGE, I. M. The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra*. 571, 256 (2002)
- The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516. *I. M. George, T. J. Turner, H. Netzer, S. B. Kraemer, J. Ruiz, D. Chelouche, D. M. Crenshaw, T. Yaqoob, K. Nandra, & R. F. Mushotzky*. 571, 265 (2002)
- GERARDY, C. L. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- GERIN, M. Detection of Triply Deuterated Ammonia in the Barbard 1 Cloud. *D. C. Lis, E. Roueff, M. Gerin, T. G. Phillips, L. H. Coudert, F. F. S. van der Tak, & P. Shilke*. 571, L55 (2002)
- GHAVAMIAN, PARVIZ. The Optical Spectrum of the SN 1006 Supernova Remnant Revisited. *Parviz Ghavamian, P. Frank Winkler, John C. Raymond, & Knox S. Long*. 572, 888 (2002)
- GHISELLINI, G. See ZHANG, Y. H., et al. Four Years of Monitoring Blazar PKS 2155–304 with *BeppoSAX*: Probing the Dynamics of the Jet.
- GHOSH, HIMEL. *Chandra* Detection of Highest Redshift ( $z \sim 6$ ) Quasars in X-Rays. *Smita Mathur, Beinda J. Wilkes, & Himel Ghosh*. 570, L5 (2002)
- GIACCONI, RICCARDO. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- GIACOMETTI, M. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background. See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- GIANNINI, TERESA. Understanding the Nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43. *Teresa Giannini, Brunella Nisini, Alessio Caratti o Garatti, & Dario Lorenzetti*. 570, L33 (2002)
- Understanding the nature of Protstellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43: Erratum (ApJ, 570, L33 [2002]). *Teresa Giannini, Brunella Nisini, Alessio Caratti, & Dario Lorenzetti*. 571, L195 (2002)
- GIBB, E. L. Hydrocarbons, Ices, and "XCN" in the Line of Sight toward the Galactic Center. *J. E. Chiar, A. J. Adamson, Y. J. Pendleton, D. C. B. Whittet, D. A. Caldwell, & E. L. Gibb*. 570, 198 (2002)
- GIBBS, K. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- GIBLIN, T. W. Extended Power-Law Decays in BATSE Gamma-Ray Bursts: Signatures of External Shocks? *T. W. Giblin, V. Connaughton, J. van Paradijs, R. D. Preece, M. S. Briggs, C. Kouveliotou, R. A. M. J. Wijers, & G. J. Fishman*. 570, 572 (2002)

- GIBSON, BRAD K. A Limit on the Metallicity of Compact High-Velocity Clouds. *Kenneth R. Sembach, Brad K. Gibson, Yeshe Fenner, & Mary E. Putman*. 572, 178 (2002)
- GIEBELS, BERRIE. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65. *Berrie Giebels, Elliott D. Bloom, Warren Focke, Gary Godfrey, Greg Madejski, Kaice T. Reilly, Pablo M. Saz Parkinson, Ganya Shabad, Reba M. Bandyopadhyay, Gilbert G. Fritz, Paul Hertz, Michael P. Kowalski, Michael N. Lovellette, Paul S. Ray, Michael T. Wolff, Kent S. Wood, Daryl J. Yentis, & Jeffrey D. Scargle*. 571, 763 (2002)
- GILLANDERS, G. H. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- GILLI, ROBERTO. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- GIL-MERINO, R. See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- GILMORE, G. F. On the Progenitor of the Type Ic Supernova 2002ap. *S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen*. 572, L147 (2002)
- GILMOZZI, ROBERTO. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- GIOMMI, P. See LA FRANCA, F., et al. The BeppoSAX High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution.
- GIOVANELLI, RICCARDO. The Inner Scale Length of Spiral Galaxy Rotation Curves. *Riccardo Giovanelli & Martha P. Haynes*. 571, L107 (2002)
- The OH Megamaser Luminosity Function. *Jeremy Darling & Riccardo Giovanelli*. 572, 810 (2002)
- GIZON, L. Time-Distance Helioseismology: The Forward Problem for Random Distributed Sources. *L. Gizon & A. C. Birch*. 571, 966 (2002)
- GLADDERS, MICHAEL D. A Measurement of Weak Lensing by Large-Scale Structure in Red-Sequence Cluster Survey Fields. *Henk Hoekstra, Howard K. C. Yee, Michael D. Gladders, L. Felipe Barrientos, Patrick B. Hall, & Leopoldo Infante*. 572, 55 (2002)
- GLADSTONE, G. RANDALL. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- GODFREY, GARY. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65.
- GOICOECHEA, L. J. See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- GOLDSTON, J. E. How Mira Variables Change Visual Light by a Thousandfold: Erratum (ApJ, 568, 931 [2002]). *M. J. Reid & J. E. Goldston*. 572, 694 (2002) (Orig. paper in 568, 931 (2002))
- GOLISCH, B. See LISSE, C., et al. Discovery of an Extremely Red Object in the Field of HD 155826.
- GÓMEZ, Y. The Nature of the Cluster of Radio Sources in GGD 14. *Y. Gómez, L. F. Rodríguez, & G. Garay*. 571, 901 (2002)
- GONZALEZ, ANTHONY H. The Las Campanas Distant Cluster Survey Correlation Function. *Anthony H. Gonzalez, Dennis Zaritsky, & Risa H. Wechsler*. 571, 129 (2002)
- GOODMAN, ALYSSA A. Velocity Structure of the Interstellar Medium as Seen by the Spectral Correlation Function. *Javier Ballesteros-Paredes, Enrique Vázquez-Semadeni, & Alyssa A. Goodman*. 571, 334 (2002)
- GOPALSWAMY, N. Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopalswamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Rosenvinge*. 572, L103 (2002)
- GORDON, K. D. The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. *J. P. Aufdenberg, P. H. Hauschildt, E. Baron, T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry*. 570, 344 (2002)
- GORJIAN, V. See LISSE, C., et al. Discovery of an Extremely Red Object in the Field of HD 155826.
- GOSS, W. M. Very Long Baseline Array Measurement of Nine Pulsar Parallaxes. *Walter F. Brisken, John M. Benson, W. M. Goss, & S. E. Thorsett*. 571, 906 (2002)
- GOTO, MIWA. Velocity-resolved [Fe II] Line Spectroscopy of L1551 IRS 5: A Partially Ionized Wind under Collimation around an Ionized Fast Jet. *Tae-Soo Pyo, Masahiko Hayashi, Naoto Kobayashi, Hiroshi Terada, Miwa Goto, Takuya Yamashita, Alan T. Tokunaga, & Yoichi Itoh*. 570, 724 (2002)
- Imaging and Spatially Resolved Spectroscopy of AFGL 2688 in the Thermal Infrared Region. *Miwa Goto, Naoto Kobayashi, Hiroshi Terada, & A. T. Tokunaga*. 572, 276 (2002)
- GOTT, J. RICHARD, III. Two-dimensional Topology of the Two-Degree Field Galaxy Redshift Survey. *Fiona Hoyle, Michael S. Vogeley, & J. Richard Gott III*. 570, 44 (2002)
- GOTTHELF, E. V. EG J2016+3657: Confirming an EGRET Blazar behind the Galactic Plane: Erratum (ApJ, 551, 1016 [2001]). *J. P. Halpern, M. Eracleous, R. Mukherjee, & E. V. Gotthelf*. 572, 693 (2002) (Orig. paper in 551, 1016 (2001))
- GOULD, A. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- GOULD, ANDREW. Millisecond Pulsars as Probes of Mass Segregation in the Galactic Center. *Julio Chanamé & Andrew Gould*. 571, 320 (2002)
- Searching for Failed Supernovae with Astrometric Binaries. *Andrew Gould & Samir Salim*. 572, 944 (2002)
- GRAHAM, ALISTER W. Evidence for an Outer Disk in the Prototype "Compact Elliptical" Galaxy M32: Erratum (ApJ, 568, L13 (2002)). *Alister W. Graham*. 572, L121 (2002)
- GRAHAM, JAMES R. Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. *Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler*. 571, 519 (2002)
- GRAHAM, M. F. MERLIN Radio Detection of an Interaction Zone within a Binary Orion Proplyd System. *M. F. Graham, J. Meaburn, S. T. Garrington, T. J. O'Brien, W. J. Henney, & C. R. O'Dell*. 570, 222 (2002)
- GRANOT, JONATHAN. Off-Axis Afterglow Emission from Jetted Gamma-Ray Bursts. *Jonathan Granot, Alin Panaitescu, Pawan Kumar, & Stan E. Woosley*. 570, L61 (2002)
- GRAZIANI, C. See PRICE, P. A., et al. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow.
- See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- GREAVES, JANE S. New Submillimeter Limits on Dust in the 55 Cancri Planetary System. *Ray Jayawardhana, Wayne S. Holland, Paul Kalas, Jane S. Greaves, William R. F. Dent, Mark C. Wyatt, & Geoffrey W. Marcy*. 570, L93 (2002)
- GREBEL, EVA K. See MCKAY, TIMOTHY A., et al. Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws.
- GREEN, PAUL J. Chandra Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens? *Paul J. Green, Chris Kochanek, Aneta Siemiginowska, Dong-Woo Kim, Maxim Markevitch, John Silverman, Anil Dosaj, Buell T. Jannuzi, & Chris Smith*. 571, 721 (2002)
- GREENE, THOMAS P. A Tidally Interacting Disk in the Young Triple System WL 20? *Mary Barsony, Thomas P. Greene, & Geoffrey A. Blake*. 572, L75 (2002)
- GREENHILL, J. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- GREGG, MICHAEL D. Keck HIRES Spectroscopy of the Fe II Low-Ionization Broad Absorption Line FBQS 0840+3633: Evidence for Two Outflows on Different Scales. *Martijn de Kool, Robert H. Becker, Nahum Arav, Michael D. Gregg, & Richard L. White*. 570, 514 (2002)
- GREGORY, SCOTT G. Rapid Rotation of Ultra-Li-depleted Halo Stars and Their Associations with Blue Stragglers. *Sean G. Ryan, Scott G. Gregory, Ulrich Kolb, Timothy C. Beers, & Toshitaka Kajino*. 571, 501 (2002)
- GREINER, J. Bright X-Ray Sources in M31 Globular Clusters. *R. Di Stefano, A. K. H. Kong, M. R. Garcia, P. Barmby, J. Greiner, S. S. Murray, & F. A. Primini*. 570, 618 (2002)
- GRENON, MICHEL. Detailed Analysis of Nearby Bulgelike Dwarf Stars. II. Lithium Abundances. *Luciana Pompéia, Beatriz Barbey, Michel Grenon, & Bruno Vaz Castilho*. 570, 820 (2002)
- GRINDLAY, JONATHAN E. Hubble Space Telescope/NICMOS Observations of Terzan 5: Stellar Content and Structure of the Core. *Haldan N. Cohn, Phyllis M. Lugger, Jonathan E. Grindlay, & Peter D. Edmonds*. 571, 818 (2002)
- A Chandra Observation of the Globular Cluster Terzan 1: The Neutron Star X-Ray Transient X1732-304 in Quiescence. *Rudy Wijmans, Craig O. Heinke, & Jonathan E. Grindlay*. 572, 1002 (2002)
- GRODENT, DENIS C. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- GROGIN, NORMAN. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- GROTH, EDWARD J. Cosmic Shear and Power Spectrum Normalization with the Hubble Space Telescope. *Alexandre Refregier, Jason Rhodes, & Edward J. Groth*. 572, L131 (2002)



- GROVE, J. E. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- GROVES, BRENT A. Are the Narrow-Line Regions in Active Galaxies Dusty and Radiation Pressure Dominated? *Michael A. Dopita, Brent A. Groves, Ralph S. Sutherland, Luc Binette, & Gerald Cecil*. 572, 753 (2002)
- GUALANDRIS, ALESSIA. The Case of PSR J1911–5958A in the Outskirts of NGC 6752: Signature of A Black Hole Binary in the Cluster Core? *Monica Colpi, Andrea Possenti, & Alessia Gualandris*. 570, L85 (2002)
- GUDIJSSEN, BORIS VILHELM. Bulk Heating and Slender Magnetic Loops in the Solar Corona. *Boris Vilhelm Gudiksen & Åke Nordlund*. 572, L113 (2002)
- GÜDEL, MANUEL. XMM-Newton Detection of Hard X-Ray Emission in the Nitrogen-Type Wolf-Rayet Star WR 110. *Stephen L. Skinner, Svetozar A. Zhekov, Manuel Güdel, & Werner Schmutz*. 572, 477 (2002)
- GUIDORZI, C. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- GULL, G. Resolving the Buried Starburst in Arp 299. *V. Charmandaris, G. J. Stacey, & G. Gull*. 571, 282 (2002)
- GUNN, JAMES E. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- GUNN, K. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- HABER, DEBORAH A. Evolving Submerged Meridional Circulation Cells within the Upper Convection Zone Revealed by Ring-Diagram Analysis. *Deborah A. Haber, Bradley W. Hindman, Juri Toomre, Richard S. Bogart, Rasmus M. Larsen, & Frank Hill*. 570, 855 (2002)
- HAFFNER, L. M. WHAM Observations of H $\alpha$  From High-Velocity Clouds: Are they Galactic or Extragalactic? *S. L. Tufte, J. D. Wilson, G. J. Madsen, L. M. Haffner, & R. J. Reynolds*. 572, L153 (2002)
- HAGMANN, C. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- HALL, PATRICK B. A Measurement of Weak Lensing by Large-Scale Structure in Red-Sequence Cluster Survey Fields. *Henk Hoekstra, Howard K. C. Yee, Michael D. Gladders, L. Felipe Barrientos, Patrick B. Hall, & Leopoldo Infante*. 572, 55 (2002)
- HALL, T. A. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- HALPERN, J. P. EG J2016+3657: Confirming an EGRET Blazar behind the Galactic Plane: Erratum (ApJ, 551, 1016 [2001]). *J. P. Halpern, M. Eracleous, R. Mukherjee, & E. V. Gotthelf*. 572, 693 (2002) (Orig. paper in 551, 1016 (2001))
- See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- HAMANA, TAKASHI. Lognormal Property of Weak-Lensing Fields. *Atsushi Taruya, Masahiro Takada, Takashi Hamana, Issha Kayo, & Toshifumi Futamase*. 571, 638 (2002)
- HAMILTON, D. C. Evolution of Anomalous Cosmic-Ray Oxygen and Helium Energy Spectra during the Solar Cycle 22 Recovery Phase in the Outer Heliosphere. *M. E. Hill, D. C. Hamilton, & S. M. Krimigis*. 572, L169 (2002)
- HAMMER, F. The Gravitational Lens CFRS 03.1077. *David Crampton, David Schade, F. Hammer, A. Matzkin, S. J. Lilly, & O. Le Fèvre*. 570, 86 (2002)
- HAN, J. L. Counterclockwise Magnetic Fields in the Norma Spiral Arm. *J. L. Han, R. N. Manchester, A. G. Lyne, & G. J. Qiao*. 570, L17 (2002)
- HARRIS, D. E. *Chandra* Discovery of a 300 Kiloparsec X-Ray Jet in the Gigahertz-peaked Spectrum Quasar PKS 1127–145. *Aneta Siemiginowska, Jill Bechtold, Thomas L. Aldcroft, Martin Elvis, D. E. Harris, & Adam Dobrzycki*. 570, 543 (2002)
- HARRIS, HUGH C. Evidence of Cloud Disruption in the L/T Dwarf Transition. *Adam J. Burgasser, Mark S. Marley, Andrew S. Ackerman, Didier Saumon, Katharina Lodders, Conrad C. Dahn, Hugh C. Harris, & J. Davy Kirkpatrick*. 571, L151 (2002)
- HARRISON, F. A. See PRICE, P. A., et al. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow.
- See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- HARTLEY, LOUISE E. Resonance Line Profile Calculations Based on Hydrodynamical Models of Cataclysmic Variable Winds. *Daniel Praga, Timothy R. Kallman, Janet E. Drew, & Louise E. Hartley*. 572, 382 (2002)
- HARTMANN, D. H. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- HARVANEK, M. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- HASINGER, GUENTHER. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- HATANO, K. See MAZZALI, P. A., et al. The Type Ic Hypervelocity SN 2002ap.
- HAUSCHILD, P. H. The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. *J. P. Aufdenberg, P. H. Hauschildt, E. Baron, T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry*. 570, 344 (2002)
- HAYASHI, MASAHIKO. Velocity-resolved [Fe II] Line Spectroscopy of L1551 IRS 5: A Partially Ionized Wind under Collimation around an Ionized Fast Jet. *Tae-Soo Pyo, Masahiko Hayashi, Naoto Kobayashi, Hiroshi Terada, Miwa Goto, Takuya Yamashita, Alan T. Tokunaga, & Yoichi Itoh*. 570, 724 (2002)
- HAYASHIDA, N. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- HAYDN, CHRISTIAN. How Lumpy Is the Milky Way's Dark Matter Halo? *Kathryn V. Johnston, David N. Spergel, & Christian Haydn*. 570, 656 (2002)
- HAYNES, MARTHA P. The Inner Scale Length of Spiral Galaxy Rotation Curves. *Riccardo Giovanelli & Martha P. Haynes*. 571, L107 (2002)
- HEATHCOTE, STEVE R. Evolution and Geometry of Hot Spots in Supernova Remnant 1987A. *Ben E. K. Sugerman, Stephen S. Lawrence, Arlin P. S. Crotts, Patrice Bouchet, & Steve R. Heathcote*. 572, 209 (2002)
- HEIDE, P. The Scale-dependent Energy Transfer Rate as a Tracer for Star Formation in Cosmological N-Body Simulations. *M. Hoeft, J. P. Mücke, & P. Heide*. 570, 33 (2002)
- HEINKE, CRAIG O. A *Chandra* Observation of the Globular Cluster Terzan 1: The Neutron Star X-Ray Transient X1732-304 in Quiescence. *Rudy Wijandans, Craig O. Heinke, & Jonathan E. Grindlay*. 572, 1002 (2002)
- HEISE, JOHN. Very Low Luminosities from the Accretion-driven Millisecond X-Ray Pulsar SAX J1808.4–3658 during Quiescence. *Rudy Wijandans, Lucien Kuiper, Jean in 't Zand, Tadayasu Dotani, Michiel van der Klis, & John Heise*. 571, 429 (2002)
- HELFAND, DAVID J. New Constraints on Neutron Star Cooling from *Chandra* Observations of 3C 58. *Patrick O. Slane, David J. Helfand, & Stephen S. Murray*. 571, L45 (2002)
- HENDEN, A. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- HENDEN, A. A. See PRICE, P. A., et al. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow.
- HENNAWI, JOSEPH F. Observational Constraints on the Self-interacting Dark Matter Scenario and the Growth of Supermassive Black Holes. *Joseph F. Hennawi & Jeremiah P. Ostriker*. 572, 41 (2002)
- HENNESSY, G. S. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- HENNESSY, GREG. See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- HENNESSY, GREG S. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- HENNEY, W. J. MERLIN Radio Detection of an Interaction Zone within a Binary Orion Proplyd System. *M. F. Graham, J. Meaburn, S. T. Garrington, T. J. O'Brien, W. J. Henney, & C. R. O'Dell*. 570, 222 (2002)
- HENRY, RICHARD CONN. The Local Interstellar Ultraviolet Radiation Field. *Richard Conn Henry*. 570, 697 (2002)
- HERCZEG, GREGORY J. The Far-Ultraviolet Spectrum of TW Hydrae. I. Observations of H $_2$  Fluorescence. *Gregory J. Herczeg, Jeffrey L. Linsky, Jeff A. Valenti, Christopher M. Johns-Krull, & Brian E. Wood*. 572, 310 (2002)
- HERMSEN, W. See MCCONNELL, M. L., et al. The Soft Gamma-Ray Spectral Variability of Cygnus X-1.
- HERNQUIST, LARS. The Growth of Galaxies in Cosmological Simulations of Structure Formation. *Chigurupati Murali, Neal Katz, Lars Hernquist, David H. Weinberg, & Romeel Davé*. 571, 1 (2002)
- High-Redshift Galaxies in the Cold Dark Matter Models. *David H. Weinberg, Lars Hernquist, & Neal Katz*. 571, 15 (2002)

- Dynamics of a Massive Black Hole at the Center of a Dense Stellar System. *Pinkie Chatterjee, Lars Hernquist, & Abraham Loeb.* 572, 371 (2002)
- HERTZ, PAUL. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65.
- HESTER, J. JEFF. Embedded Star Formation in the Eagle Nebula. *Rodger J. Thompson, Bradford A. Smith, & J. Jeff Hester.* 570, 749 (2002)
- HIGHBERGER, J. L. Heavy-Metal Chemistry in Proto-Planetary Nebulae: Detection of MgNC, NaCN, and AlF toward CRL 2688: Erratum (ApJ, 562, 790 [2001]). *J. L. Highberger, C. Savage, J. H. Beiging, & L. M. Ziurys.* 571, 1022 (2002) (Orig. paper in 562, 790 (2001))
- HIGURASHI, Y. See HORVÁTH, Á., et al. Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction.
- HILL, F. Localizing Width and Energy of Solar Global  $p$ -Modes. *R. Komm, R. Howe, & F. Hill.* 572, 663 (2002)
- HILL, FRANK. Evolving Submerged Meridional Circulation Cells within the Upper Convection Zone Revealed by Ring-Diagram Analysis. *Deborah A. Haber, Bradley W. Hindman, Juri Toomre, Richard S. Bogart, Rasmus M. Larsen, & Frank Hill.* 570, 855 (2002)
- HILL, K. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.  
See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- HILLAS, A. M. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- HINDMAN, BRADLEY W. Evolving Submerged Meridional Circulation Cells within the Upper Convection Zone Revealed by Ring-Diagram Analysis. *Deborah A. Haber, Bradley W. Hindman, Juri Toomre, Richard S. Bogart, Rasmus M. Larsen, & Frank Hill.* 570, 855 (2002)
- HINDSLEY, ROBERT B. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- HIVON, E. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.  
See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- HYALMARSON, Å. Survey Observations of  $c\text{-C}_2\text{H}_2\text{O}$  and  $\text{CH}_3\text{CHO}$  toward Massive Star-forming Regions: Erratum (ApJ, 560, 792 [2001]). *M. Ikeda, M. Ohishi, A. Nummelin, J. E. Dickens, P. Bergman, Å. Hjalmarson, & W. M. Irvine.* 571, 560 (2002) (Orig. paper in 560, 792 (2001))
- HJORTH, JENS. The Time Delay of the Quadruple Quasar RX J0911.4+0551. *Jens Hjorth, Ingunn Burud, Andreas O. Jaunsen, Paul L. Schechter, Jean-Paul Kneib, Michael I. Andersen, Heidi Korhonen, Jacob W. Clasen, A. Amanda Kaas, Roy Vstensen, Jaan Pelt, & Frank J. Pijpers.* 572, L11 (2002)
- HILL, M. E. Evolution of Anomalous Cosmic-Ray Oxygen and Helium Energy Spectra during the Solar Cycle 22 Recovery Phase in the Outer Heliosphere. *M. E. Hill, D. C. Hamilton, & S. M. Krimigis.* 572, L169 (2002)
- HOEFT, M. The Scale-dependent Energy Transfer Rate as a Tracer for Star Formation in Cosmological  $N$ -Body Simulations. *M. Hoeft, J. P. Mücke, & P. Heide.* 570, 33 (2002)
- HOEKSTRA, HENK. A Measurement of Weak Lensing by Large-Scale Structure in Red-Sequence Cluster Survey Fields. *Henk Hoekstra, Howard K. C. Yee, Michael D. Gladders, L. Felipe Barrientos, Patrick B. Hall, & Leopoldo Infante.* 572, 55 (2002)
- HOFFMAN, YEHUDA. Constrained Simulations of the Real Universe. II. Observational Signatures of Intergalactic Gas in the Local Supercluster Region. *Andrey V. Kravtsov, Anatoly Klypin, & Yehuda Hoffman.* 571, 563 (2002)
- HOGERHEIJDE, M. R. The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte.* 570, 708 (2002)
- HOLBERG, J. B. A Determination of the Local Density of White Dwarf Stars. *J. B. Holberg, Terry D. Oswalt, & E. M. Sion.* 571, 512 (2002)
- HOLDER, J. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- HOLLAND, WAYNE S. New Submillimeter Limits on Dust in the 55 Cancri Planetary System. *Ray Jayawardhana, Wayne S. Holland, Paul Kalas, Jane S. Greaves, William R. F. Dent, Mark C. Wyatt, & Geoffrey W. Marcy.* 570, L93 (2002)
- HOLLIS, J. M. Interstellar Antifreeze: Ethylene Glycol. *J. M. Hollis, F. J. Lovas, P. R. Jewell, & L. H. Coudert.* 571, L59 (2002)
- HOLTZMAN, J. See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- HOLZ, DANIEL E. A Universal Probability Distribution Function for Weak-lensing Amplification. *Yun Wang, Daniel E. Holz, & Dipak Munshi.* 572, L15 (2002)
- HONDA, K. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- HONG, SEUNG SOO. The Parker Instability in Three Dimensions: Corrugations and Superclouds along the Carina-Sagittarius Arm. *José Franco, Jongsoo Kim, Emilio J. Alfaro, & Seung Soo Hong.* 570, 647 (2002)
- HOOPES, CHARLES G. Far-Ultraviolet Spectroscopic Explorer Observations of Degree-Scale Variations in Galactic Halo O vi. *J. Christopher Howk, Blair D. Savage, Kenneth R. Sembach, & Charles G. Hoopes.* 572, 264 (2002)
- HORAN, D. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies. *D. Horan, H. M. Badran, I. H. Bond, S. M. Bradbury, J. H. Buckley, M. J. Carson, D. A. Carter-Lewis, M. Catanese, W. Cui, S. Dunlea, D. Das, I. de la Calle Perez, M. D'Vali, D. J. Fegan, S. J. Fegan, J. P. Finley, J. A. Gaidos, K. Gibbs, G. H. Gillanders, T. A. Hall, A. M. Hillas, J. Holder, M. Jordan, M. Kerzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, F. Krennrich, M. J. Lang, S. LeBohec, R. Lessard, J. Lloyd-Evans, B. McKernan, P. Moriarty, D. Muller, R. Ong, R. Palladini, D. Petry, J. Quinn, N. W. Reay, P. T. Reynolds, H. J. Rose, G. H. Sembroski, R. Sidwell, N. Stanton, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, & T. C. Weekes.* 571, 753 (2002)
- HORVÁTH, Á. Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction. *Á. Horváth, J. Weiner, A. Galonsky, F. Deák, Y. Higurashi, K. Ieki, Y. Iwata, A. Kiss, J. J. Kolata, Z. Seres, J. von Schwarzenberg, H. Schelin, S. Takeuchi, S. Typel, & R. E. Warner.* 570, 926 (2002)
- HOSHINO, M. Nonthermal Electrons at High Mach Number Shocks: Electron Shock Suffering Acceleration. *M. Hoshino & N. Shimada.* 572, 880 (2002)
- HOSOKAWA, TAKASHI. The Relation Between Mid-Infrared Emission and Black Hole Mass in Active Galactic Nuclei: A Direct Way to Probe Black Hole Growth? *Almudena Alonso-Herrero, Valentin D. Ivanov, Ray Jayawardhana, & Takashi Hosokawa.* 571, L1 (2002)
- HOUC, JOHN C. The Shape of the Relativistic Iron K $\alpha$  Line from MCG +6-30-15 Measured with the Chandra High Energy Transmission Grating Spectrometer and the Rossi X-Ray Timing Explorer. *Julia C. Lee, Kazushi Iwasawa, John C. Houck, Andrew C. Fabian, Herman L. Marshall, & Claude R. Canizares.* 570, L47 (2002)
- HOWARD, R. A. Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopalswamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Rosenvinge.* 572, L103 (2002)
- HOWARTH, I. D. The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. *J. P. Aufdenberg, P. H. Hauschildt, E. Baron, T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry.* 570, 344 (2002)
- HOWE, R. Localizing Width and Energy of Solar Global  $p$ -Modes. *R. Komm, R. Howe, & F. Hill.* 572, 663 (2002)
- HOWELL, ROBERT R. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- HOWK, J. CHRISTOPHER. The UCSD HIRES/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Howk, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Rubin, & Nao Suzuki.* 571, 693 (2002)  
*Far-Ultraviolet Spectroscopic Explorer Observations of Degree-Scale Variations in Galactic Halo O vi.* *J. Christopher Howk, Blair D. Savage, Kenneth R. Sembach, & Charles G. Hoopes.* 572, 264 (2002)
- HOYLE, FIONA. Two-dimensional Topology of the Two-Degree Field Galaxy Redshift Survey. *Fiona Hoyle, Michael S. Vogeley, & J. Richard Gott III.* 570, 44 (2002)
- HIRSTOV, V. V. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.  
See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.

- HU, ESTHER M. The Extended Emission-Line Region of 4C 37.43. *Alan Stockton, John W. MacKenty, Esther M. Hu, & Tae-Sun Kim*. 572, 735 (2002)
- HUARD, TRACY.  $N_2H^+$  and  $C^{18}$  Depletion in a Cold Dark Cloud. *Edwin A. Bergin, João Alves, Tracy Huard, & Charles J. Lada*. 570, L101 (2002)
- HUDSON, H. S. Simultaneous Observations of a Moreton Wave on 1997 November 3 in  $H\alpha$  and Soft X-Rays. *N. Narukage, H. S. Hudson, T. Morimoto, S. Akiyama, R. Kitai, H. Kurokawa, & K. Shibata*. 572, L109 (2002)
- HUGHES, PHILIP A. Three-dimensional Hydrodynamic Simulations of Relativistic Extragalactic Jets. *Philip A. Hughes, Mark A. Miller, & G. Comer Duncan*. 572, 713 (2002)
- HUI, LAM. See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- Atmospheric Lensing and Oblateness Effects during an Extrasolar Planetary Transit. *Lam Hui & Sara Seager*. 572, 540 (2002)
- HURLEY, JARROD R. The Promiscuous Nature of Stars in Clusters. *Jarrod R. Hurley & Michael M. Shara*. 570, 184 (2002)
- Star Clusters as Type Ia Supernova Factories. *Michael M. Shara & Jarrod R. Hurley*. 571, 830 (2002)
- HURLEY, K. See PRICE, P. A., et al. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow.
- See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- HURLEY, KEVIN C. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- IACOANGELI, A. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- IKKI, K. See HORVÁTH, Á., et al. Cross Section for the Astrophysical  $^{14}C(n, \gamma)^{15}C$  Reaction via the Inverse Reaction.
- IKEDA, M. Survey Observations of  $c-C_2H_2O$  and  $CH_3CHO$  toward Massive Star-forming Regions: Erratum (ApJ, 560, 792 [2001]). *M. Ikeda, M. Ohishi, A. Nummelin, J. E. Dickens, P. Bergman, Å. Hjalmarson, & W. M. Irvine*. 571, 560 (2002) (Orig. paper in 560, 792 (2001))
- ILIEV, ILIAN T. On the Direct Detectability of the Cosmic Dark Ages: 21 Centimeter Emission from Minihalos. *Ilian T. Iliev, Paul R. Shapiro, Andrea Ferrara, & Hugo Martel*. 572, L123 (2002)
- ILLINGWORTH, GARTH. See IM, MYUNGSHIN, et al. The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ .
- IM, MYUNGSHIN. The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ . *Myungshin Im, Luc Simard, S. M. Faber, David C. Koo, Karl Gebhardt, Christopher N. A. Willmer, Andrew Phillips, Garth Illingworth, Nicole P. Vogt, & Vicki L. Sarajedini*. 571, 136 (2002)
- IMANISHI, KENSUKE. Chandra and ASCA Observations of the X-Ray-brightest T Tauri Stars in the  $\rho$  Ophiuchi Cloud. *Kensuke Imanishi, Masahiro Tsujimoto, & Katsuji Koyama*. 572, 300 (2002)
- IMMLER, STEFAN. See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- IMPEY, C. D. See LEHAR, J., et al. Hubble Space Telescope Observations of 10 Two-Image Gravitational Lenses: Erratum (ApJ, 536, 584 [2002]).
- INFANTE, LEOPOLDO. A Measurement of Weak Lensing by Large-Scale Structure in Red-Sequence Cluster Survey Fields. *Henk Hoekstra, Howard K. C. Yee, Michael D. Gladders, L. Felipe Barrientos, Patrick B. Hall, & Leopoldo Infante*. 572, 55 (2002)
- INOUE, AKIO K. Spatial Distribution of Dust Grains within H II Regions. *Akio K. Inoue*. 570, 688 (2002)
- Star Formation Rate From Dust Infrared Emission. *Akio K. Inoue*. 570, L97 (2002)
- INOUE, H. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- INOUE, N. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- IN 'T ZAND, JEAN. Very Low Luminosities from the Accretion-driven Millisecond X-Ray Pulsar SAX J1808.4-3658 during Quiescence. *Rudy Wijmans, Lucien Kuiper, Jean in 't Zand, Tadayasu Dotani, Michiel van der Klis, & John Heise*. 571, 429 (2002)
- IOKA, KUNIHITO. A Possible Origin of Lognormal Distributions in Gamma-Ray Bursts. *Kunihito Ioka & Takashi Nakamura*. 570, L21 (2002)
- X-Ray Flashes from Off-Axis Gamma-Ray Bursts. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura*. 571, L31 (2002)
- IRVINE, W. M. Survey Observations of  $c-C_2H_2O$  and  $CH_3CHO$  toward Massive Star-forming Regions: Erratum (ApJ, 560, 792 [2001]). *M. Ikeda, M. Ohishi, A. Nummelin, J. E. Dickens, P. Bergman, Å. Hjalmarson, & W. M. Irvine*. 571, 560 (2002) (Orig. paper in 560, 792 (2001))
- IRWIN, JIMMY A. Untangling the X-Ray Emission from the Sa Galaxy NGC 1291 with Chandra. *Jimmy A. Irwin, Craig L. Sarazin, & Joel N. Bregman*. 570, 152 (2002)
- ISHIDA, MANABU. ASCA Observations of the Supernova Remnant IC 443: Thermal Structure and Detection of Overionized Plasma. *Masahiro T. Kawasaki, Masanobu Ozaki, Fumiaki Nagase, Kuniaki Masai, Manabu Ishida, & Robert Petre*. 572, 897 (2002)
- ISHIGURO, M. First Detection of an Optical Dust Trail along the Orbit of 22P/Kopff. *M. Ishiguro, J. Watanabe, F. Usui, T. Tanigawa, D. Kinoshita, J. Suzuki, R. Nakamura, M. Ueno, & T. Mukai*. 572, L117 (2002)
- ISHII, TAKAKO T. Emergence and Drastic Breakdown of a Twisted Flux Rope to Trigger Strong Solar Flares in NOAA Active Region 9026. *Hiroki Kurokawa, Tongjiang Wang, & Takako T. Ishii*. 572, 598 (2002)
- ITO, YOICHI. Velocity-resolved [Fe II] Line Spectroscopy of L1551 IRS 5: A Partially Ionized Wind under Collimation around an Ionized Fast Jet. *Tae-Soo Pyo, Masahiko Hayashi, Naoto Kobayashi, Hiroshi Terada, Miwa Goto, Takuya Yamashita, Alan T. Tokunaga, & Yoichi Itoh*. 570, 724 (2002)
- IVANOV, VALENTIN D. The Relation Between Mid-Infrared Emission and Black Hole Mass in Active Galactic Nuclei: A Direct Way to Probe Black Hole Growth? *Almudena Alonso-Herrero, Valentin D. Ivanov, Ray Jayawardhana, & Takashi Hosokawa*. 571, L1 (2002)
- IVANS, INESE I. See COWAN, JOHN J., et al. The Chemical Composition and Age of the Metal-poor Halo Star BD +17°3248.
- IVESIĆ, ŽELJKO. See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- IVEZIĆ, ŽELJKO. Dust Emission from Active Galactic Nuclei. *Maia Nenkova, Željko Ivezić, & Moshe Elitzur*. 570, L9 (2002)
- See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- IVEZIĆ, ŽELJKO. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- IVISON, ROB. A Submillimeter Survey of Gravitationally Lensed Quasars. *Richard Barvainis & Rob Ivison*. 571, 712 (2002)
- IWAMOTO, K. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- IWASAWA, KAZUSHI. The Shape of the Relativistic Iron  $K\alpha$  Line from MCG -6-30-15 Measured with the Chandra High Energy Transmission Grating Spectrometer and the Rossi X-Ray Timing Explorer. *Julia C. Lee, Kazushi Iwasawa, John C. Houck, Andrew C. Fabian, Herman L. Marshall, & Claude R. Canizares*. 570, L47 (2002)
- IWATA, Y. See HORVÁTH, Á., et al. Cross Section for the Astrophysical  $^{14}C(n, \gamma)^{15}C$  Reaction via the Inverse Reaction.
- IYE, M. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- JACOBY, GEORGE H. Intracluster Red Giant Stars in the Virgo Cluster. *Patrick R. Durrell, Robin Ciardullo, John J. Feldmeier, George H. Jacoby, & Steinn Sigurdsson*. 570, 119 (2002)
- JAFFE, A. H. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.

- JAFFE, DANIEL T. Looking for Pure Rotational H<sub>2</sub> Emission from Protoplanetary Disks. *Matthew J. Richter, Daniel T. Jaffe, Geoffrey A. Blake, & John H. Lucy*. 572, L161 (2002)
- JAIN, BHUVNESH. See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- JANNUZI, BUELL T. See GREEN, PAUL J., et al. *Chandra* Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens?
- JANZEN, PAUL. Tomography of the Solar Corona. I. Robust, Regularized, Positive Estimation of the Three-dimensional Electron Density Distribution from LASCO-C2 Polarized White-Light Images. *Richard A. Frazin & Paul Janzen*. 570, 408 (2002)
- JAUNCEY, DAVID L. Microarcsecond Radio Imaging Using Earth-Orbit Synthesis. *Jean-Pierre Macquart & David L. Jauncey*. 572, 786 (2002)
- JAUNSEN, ANDREAS O. See HJORTH, JENS, et al. The Time Delay of the Quadruple Quasar RX J0911.4+0551.
- JAYAWARDHANA, RAY. New Submillimeter Limits on Dust in the 55 Cancri Planetary System. *Ray Jayawardhana, Wayne S. Holland, Paul Kalas, Jane S. Greaves, William R. F. Dent, Mark C. Wyatt, & Geoffrey W. Marcy*. 570, L93 (2002)
- The Relation Between Mid-Infrared Emission and Black Hole Mass in Active Galactic Nuclei: A Direct Way to Probe Black Hole Growth? *Almudena Alonso-Herrero, Valentin D. Ivanov, Ray Jayawardhana, & Takashi Hosokawa*. 571, L1 (2002)
- Discovery of an Edge-On Disk in the MBM 12 Young Association. *Ray Jayawardhana, K. L. Luhman, Paola D'Alessio, & John R. Stauffer*. 571, L51 (2002)
- JEHIN, EMMANUEL. Recurring Outbursts and Nuclear Fragmentation of Comet C/2001 A2 (LINEAR). *Zdenek Sekanina, Emmanuel Jehin, Hermann Boehnhardt, Xavier Bonfils, Oliver Schuetz, & Daniel Thomas*. 572, 679 (2002)
- JERNIGAN, J. G. See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- JESSIE, RONALD. The Validity of the Adiabatic Contraction Approximation for Dark Matter Halos. *Ronald Jessiet, Thorsten Naab, & Andreas Burkert*. 571, L89 (2002)
- JEWELL, P. R. Interstellar Antifreeze: Ethylene Glycol. *J. M. Hollis, F. J. Lovas, P. R. Jewell, & L. H. Coudert*. 571, L59 (2002)
- Ji, JIANGHUI. The Dynamical Simulations of the Planets Orbiting GJ 876. *Jianghui Ji, Guangyu Li, & Lin Lin*. 572, 1041 (2002)
- JOGE, SHARDHA. Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogee, Johan H. Knapen, Seppo Laine, Isaac Shlosman, Nick Z. Scoville, & Peter Englmaier*. 570, L55 (2002)
- JOHNS-KRULL, CHRISTOPHER M. The Far-Ultraviolet Spectrum of TW Hydrae. I. Observations of H<sub>2</sub> Fluorescence. *Gregory J. Herczeg, Jeffrey L. Linsky, Jeff A. Valenti, Christopher M. Johns-Krull, & Brian E. Wood*. 572, 310 (2002)
- JOHNSON, ROBERT E. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- JOHNSTON, DAVID. See SZAPUDI, ISTVAN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See MCKAY, TIMOTHY A., et al. Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- JOHNSTON, KATHRYN V. How Lumpy Is the Milky Way's Dark Matter Halo? *Kathryn V. Johnston, David N. Spergel, & Christian Haydn*. 570, 656 (2002)
- JONES, HUGH R. A. Two Extrasolar Planets from the Anglo-Australian Planet Search. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, & Brad D. Carter*. 571, 528 (2002)
- JONES, T. W. On the Possible Reason for Nondetection of TeV Protons in Supernova Remnants. *M. A. Malkov, P. H. Diamond, & T. W. Jones*. 571, 856 (2002)
- JONES, W. C. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- JORDAN, M. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- JOSHI, K. J. Mass Segregation in Globular Clusters. *J. M. Fregeau, K. J. Joshi, S. F. Portegies Zwart, & F. A. Rasio*. 570, 171 (2002)
- JUDA, MICHAEL. See DRAKE, JEREMY J., et al. Is RX J1856.5-3754 a Quark Star?
- KAAS, A. AMANDA. See HJORTH, JENS, et al. The Time Delay of the Quadruple Quasar RX J0911.4+0551.
- KADOTA, K. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above 10<sup>19</sup> eV Estimated by the Akeno Giant Air Shower Array Experiment.
- KAISER, M. L. Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopalswamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Rosenvinge*. 572, L103 (2002)
- KAJINO, TOSHITAKA. Rapid Rotation of Ultra-Li-depleted Halo Stars and Their Associations with Blue Stragglers. *Sean G. Ryan, Scott G. Gregory, Ulrich Kolb, Timothy C. Beers, & Toshitaka Kajino*. 571, 501 (2002)
- KAKIMOTO, F. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above 10<sup>19</sup> eV Estimated by the Akeno Giant Air Shower Array Experiment.
- KALAS, PAUL. New Submillimeter Limits on Dust in the 55 Cancri Planetary System. *Ray Jayawardhana, Wayne S. Holland, Paul Kalas, Jane S. Greaves, William R. F. Dent, Mark C. Wyatt, & Geoffrey W. Marcy*. 570, L93 (2002)
- KALLMAN, TIMOTHY R. Resonance Line Profile Calculations Based on Hydrodynamical Models of Cataclysmic Variable Winds. *Daniel Proga, Timothy R. Kallman, Janet E. Drew, & Louise E. Hartley*. 572, 382 (2002)
- KALOGERA, VASSILIKI. Merger Sites of Double Neutron Stars and their Host Galaxies. *Krzysztof Belczynski, Tomasz Bulik, & Vassiliki Kalogera*. 571, L147 (2002)
- A Comprehensive Study of Binary Compact Objects as Gravitational Wave Sources: Evolutionary Channels, Rates, and Physical Properties. *Krzysztof Belczynski, Vassiliki Kalogera, & Tomasz Bulik*. 572, 407 (2002)
- KAMATA, K. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above 10<sup>19</sup> eV Estimated by the Akeno Giant Air Shower Array Experiment.
- KAMINSKI, C. See LISSE, C., et al. Discovery of an Extremely Red Object in the Field of HD 155826.
- KANE, S. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- KAPLAN, D. L. X-Ray Timing of the Enigmatic Neutron Star RX J0720.4-3125. *D. L. Kaplan & S. R. Kulkarni*. 570, L79 (2002)
- The Parallax and Proper Motion of RX J1856.5-3754 Revisited. *D. L. Kaplan, M. H. van Kerkwijk, & J. Anderson*. 571, 447 (2002)
- KASHIKAWA, N. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- KASHYAP, VINAY L. Statistics, Handle with Care: Detecting Multiple Model Components with the Likelihood Ratio Test. *Rostislav Protassov, David A. van Dyk, Alanna Connors, Vinay L. Kashyap, & Aneta Siemiginowska*. 571, 545 (2002)
- KASPI, VICTORIA M. Spectral Components of the Radio Composite Supernova Remnant G11.2-0.3. *Cindy Tam, Mallory S. E. Roberts, & Victoria M. Kaspi*. 572, 202 (2002)
- KASTNER, JOEL H. X-Ray Emission from Central Binary Systems of Planetary Nebulae. *Noam Soker & Joel H. Kastner*. 570, 245 (2002)
- KASYAP, VINAY. See DRAKE, JEREMY J., et al. Is RX J1856.5-3754 a Quark Star?
- KATZ, NEAL. The Growth of Galaxies in Cosmological Simulations of Structure Formation. *Chigurupati Murali, Neal Katz, Lars Hernquist, David H. Weinberg, & Romeel Davé*. 571, 1 (2002)
- High-Redshift Galaxies in the Cold Dark Matter Models. *David H. Weinberg, Lars Hernquist, & Neal Katz*. 571, 15 (2002)
- KAWABATA, K. S. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- KAWABATA, T. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- KAWAGUCHI, S. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above 10<sup>19</sup> eV Estimated by the Akeno Giant Air Shower Array Experiment.
- KAWAI, N. See PRICE, P. A., et al. GRB 010921: Discovery of the First *High Energy Transient Explorer* Afterglow.
- See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.



- KAWAKAMI, S. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- KAWAKITA, H. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- KAWAKITA, HIDEYO. Revised Fluorescence Efficiencies of Cometary  $\text{NH}_2$ : Ammonia Abundance in Comets. *Hideyo Kawakita & Jun-ichi Watanabe*. 572, L177 (2002)
- KAWASAKI, MASAHIRO T. ASCA Observations of the Supernova Remnant IC 443: Thermal Structure and Detection of Overionized Plasma. *Masahiro T. Kawasaki, Masanobu Ozaki, Fumiaki Nagase, Kuniaki Masai, Manabu Ishida, & Robert Petre*. 572, 897 (2002)
- KAWASAKI, Y. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- KAWASUMI, N. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- KAYO, ISSHA. Lognormal Property of Weak-Lensing Fields. *Atsushi Taruya, Masahiro Takada, Takashi Hamana, Issha Kayo, & Toshifumi Futamase*. 571, 638 (2002)
- KEETON, C. R. See LEHAR, J., et al. *Hubble Space Telescope* Observations of 10 Two-Image Gravitational Lenses: Erratum (ApJ, 536, 584 [2002]).
- KENNICUTT, ROBERT C., JR. Optical Spectroscopy of Metal-rich H II Regions and Circumstellar Hot Spots in M83 and NGC 3351. *Fabio Bresolin & Robert C. Kennicutt, Jr.* 572, 838 (2002)
- KENT, S. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- KENT, STEPHEN. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- KERP, JURGEN. ROSAT X-Ray Observations of the Dwarf Galaxy Holmberg II. *Jürgen Kerp, Fabian Walter, & Elias Brinks*. 571, 809 (2002)
- KERTZMAN, M. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- KEWLEY, LISA. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- KHAIRUL ALAM, S. M. The Shapes of Galaxies in the Sloan Digital Sky Survey. *S. M. Khairul Alam & Barbara S. Ryden*. 570, 610 (2002)
- Dark Matter Properties and Halo Central Densities. *S. M. Khairul Alam, James S. Bullock, & David H. Weinberg*. 572, 34 (2002)
- KIEDA, D. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- KILDEA, J. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- KIM, DONG-WOO. See GREEN, PAUL J., et al. *Chandra* Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens?
- KIM, JONGSOO. The Parker Instability in Three Dimensions: Corrugations and Superclouds along the Carina-Sagittarius Arm. *José Franco, Jongsoo Kim, Emilio J. Alfaro, & Seung Soo Hong*. 570, 647 (2002)
- KIM, RITA S. J. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- KIM, SUNGEUN. The Origin of Far-Infrared [C II] Emission in the Large Magellanic Cloud. *Sungeun Kim & William T. Reach*. 571, 288 (2002)
- KIM, TAE-SUN. The Extended Emission-Line Region of 4C 37.43. *Alan Stockton, John W. MacKenty, Esther M. Hu, & Tae-Sun Kim*. 572, 735 (2002)
- KIM, WOONG-TAE. Formation and Fragmentation of Gaseous Spurs in Spiral Galaxies. *Woong-Tae Kim & Eve C. Ostriker*. 570, 132 (2002)
- KIMBLE, R. A. See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- KINGUGASA, K. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- KINION, D. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- KINOSHITA, D. See ISHIGURO, M., et al. First Detection of an Optical Dust Trail along the Orbit of 22P/Kopff.
- KIRKMAN, DAVID. The UCSD HIREs/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Howk, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Rubin, & Nao Suzuki*. 571, 693 (2002)
- KIRKPATRICK, J. DAVY. Evidence of Cloud Disruption in the L/T Dwarf Transition. *Adam J. Burgasser, Mark S. Marley, Andrew S. Ackerman, Didier Saumon, Katharina Lodders, Conrad C. Dahn, Hugh C. Harris, & J. Davy Kirkpatrick*. 571, L151 (2002)
- A Distant Stellar Companion in the  $\nu$  Andromedae System. *Patrick J. Lowrance, J. Davy Kirkpatrick, & Charles A. Beichman*. 572, L79 (2002)
- KIRSHNER, ROBERT P. See PUN, CHUN S. J., et al. Modeling the *Hubble Space Telescope* Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- KISS, Á. See HORVÁTH, Á., et al. Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction.
- KITAL, R. Simultaneous Observations of a Moreton Wave on 1997 November 3 in H $\alpha$  and Soft X-Rays. *N. Narukage, H. S. Hudson, T. Morimoto, S. Akiyama, R. Kitai, H. Kurokawa, & K. Shibata*. 572, L109 (2002)
- KLEIN, B. See CAMILO, F., et al. Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope.
- KLEINMAN, S. J. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- KLOSE, S. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- KLYPIN, ANATOLY. Constrained Simulations of the Real Universe. II. Observational Signatures of Intergalactic Gas in the Local Supercluster Region. *Andrey V. Kravtsov, Anatoly Klypin, & Yehuda Hoffman*. 571, 563 (2002)
- KNAPEN, J. H. On the Progenitor of the Type Ic Supernova 2002ap. *S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen*. 572, L147 (2002)
- KNAPEN, JOHAN H. Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogee, Johan H. Knapen, Seppo Laine, Isaac Shlosman, Nick Z. Scoville, & Peter Englmaier*. 570, L55 (2002)
- KNAPP, GILLIAN R. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- KNAPP, J. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- KNEIB, JEAN-PAUL. See HJORTH, JENS, et al. The Time Delay of the Quadruple Quasar RX J0911.4+0551.
- KOBAYASHI, NAOTO. Velocity-resolved [Fe II] Line Spectroscopy of L1551 IRS 5: A Partially Ionized Wind under Collimation around an Ionized Fast Jet. *Tae-Soo Pyo, Masahiko Hayashi, Naoto Kobayashi, Hiroshi Terada, Miwa Goto, Takuya Yamashita, Alan T. Tokunaga, & Yoichi Itoh*. 570, 724 (2002)
- Imaging and Spatially Resolved Spectroscopy of AFGL 2688 in the Thermal Infrared Region. *Miwa Goto, Naoto Kobayashi, Hiroshi Terada, & A. T. Tokunaga*. 572, 276 (2002)
- KOBAYASHI, Y. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- KOCHANÉK, C. S. See LEHAR, J., et al. *Hubble Space Telescope* Observations of 10 Two-Image Gravitational Lenses: Erratum (ApJ, 536, 584 [2002]).
- Direct Detection of Cold Dark Matter Substructure. *N. Dalal & C. S. Kochanek*. 572, 25 (2002)
- KOCHANÉK, CHRIS. See GREEN, PAUL J., et al. *Chandra* Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens?
- KOEKEMOER, ANTON. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- KOHL, J. L. Empirical Densities, Kinetic Temperatures, and Outflow Velocities in the Equatorial Streamer Belt at Solar Minimum. *L. Strachan, R. Suleiman, A. V. Panasyuk, D. A. Biesecker, & J. L. Kohl*. 571, 1008 (2002)
- KOHNO, K. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- KOLATA, J. J. See HORVÁTH, Á., et al. Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction.

- KOLB, ULRICH. Rapid Rotation of Ultra-Li-depleted Halo Stars and Their Associations with Blue Stragglers. *Sean G. Ryan, Scott G. Gregory, Ulrich Kolb, Timothy C. Beers, & Toshiyuki Kajino*. 571, 501 (2002)
- KOLDOBA, A. V. Poynting Jets from Accretion Disks. *R. V. E. Lovelace, H. Li, A. V. Koldoba, G. V. Ustyugova, & M. M. Romanova*. 572, 445 (2002)
- KOLLMEIER, JUNA A. The Kinematic Connection between Absorbing Gas toward QSOs and Galaxies at Intermediate Redshift. *Charles C. Steidel, Juna A. Kollmeier, Alice E. Shapley, Christopher W. Churchill, Mark Dickinson, & Max Pettini*. 570, 526 (2002)
- KOMM, R. Localizing Width and Energy of Solar Global  $p$ -Modes. *R. Komm, R. Howe, & F. Hill*. 572, 663 (2002)
- KONG, A. K. H. Bright X-Ray Sources in M31 Globular Clusters. *R. Di Stefano, A. K. H. Kong, M. R. Garcia, P. Barmby, J. Greiner, S. S. Murray, & F. A. Primi*. 570, 618 (2002)
- KONG, ALBERT K. H. The X-Ray Spectra of Black Hole X-Ray Novae in Quiescence as Measured by *Chandra*. *Albert K. H. Kong, Jeffrey E. McClintock, Michael R. Garcia, Stephen S. Murray, & Didier Barret*. 570, 277 (2002)
- XMM-Newton Observation of the Spiral Galaxy M74 (NGC 628). *Roberto Soria & Albert K. H. Kong*. 572, L33 (2002)
- KOO, DAVID C. See IM, MYUNGSHIN, et al. The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ .
- KORIBALSKI, B. S. Australia Telescope Compact Array Radio Imaging of the Proplyd-like Objects in the Giant H II Region NGC 3603. *A. Mücke, B. S. Koribalski, A. F. J. Moffat, M. F. Corcoran, & I. R. Stevens*. 571, 366 (2002)
- KORNHONEN, HEIDI. See JHORTH, JENS, et al. The Time Delay of the Quadruple Quasar RX J0911.4+0551.
- KOSACK, K. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- KOSOVICHEV, A. G. Large-Scale Solar Coronal Structures in Soft X-Rays and Their Relationship to the Magnetic Flux. *E. E. Benevolenskaya, A. G. Kosovichev, J. R. Lemen, P. H. Scherrer, & G. L. Slater*. 571, L181 (2002)
- KOSUGI, G. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- KOTANI, T. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- KOTILAINEN, J. K. Subarcsecond Emission in Seyfert Galaxies: The Nuclear Component in the L and M Bands. *M. A. Prieto, J. Reunanen, & J. K. Kotilainen*. 571, L7 (2002)
- KOUCHI, AKIRA. Efficient Formation of Formaldehyde and Methanol by the Addition of Hydrogen Atom to CO in H<sub>2</sub>O-CO Ice at 10 K. *Naoki Watanabe & Akira Kouchi*. 571, L173 (2002)
- KOUVELIOTOU, C. Extended Power-Law Decays in BATSE Gamma-Ray Bursts: Signatures of External Shocks? *T. W. Giblin, V. Connaughton, J. van Paradijs, R. D. Preece, R. S. Briggs, C. Kouveliotou, R. A. M. J. Wijers, & G. J. Fishman*. 570, 572 (2002)
- KOVIAT, K. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- KOWALSKI, MICHAEL P. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65.
- KOYAMA, KATSUJI. *Chandra* and *ASCA* Observations of the X-Ray-brightest T Tauri Stars in the  $\rho$  Ophiuchi Cloud. *Kensuke Imanishi, Masahiro Tsujimoto, & Katsuji Koyama*. 572, 300 (2002)
- KRAEMER, S. B. The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra*. 571, 256 (2002)
- See GEORGE, I. M., et al. The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516.
- KRAMER, M. See CAMILO, F., et al. Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope.
- KRAITZ, KARL-LUDWIG. See COWAN, JOHN J., et al. The Chemical Composition and Age of the Metal-poor Halo Star BD +17°3248.
- KRAVTSOV, ANDREY V. Constrained Simulations of the Real Universe. II. Observational Signatures of Intergalactic Gas in the Local Supercluster Region. *Andrey V. Kravtsov, Anatoly Klypin, & Yehuda Hoffman*. 571, 563 (2002)
- KRENNRICH, F. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- KRIMIGIS, S. M. Evolution of Anomalous Cosmic-Ray Oxygen and Helium Energy Spectra during the Solar Cycle 22 Recovery Phase in the Outer Heliosphere. *M. E. Hill, D. C. Hamilton, & S. M. Krimigis*. 572, L169 (2002)
- KRIST, JOHN E. *Hubble Space Telescope/WFPC2* Images of the GG Tauri Circumbinary Disk. *John E. Krist, Karl R. Stapelfeldt, & Alan M. Watson*. 570, 785 (2002)
- KRON, RICHARD. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- KRONGOLD, Y. The Circumgalactic Environment of Bright *IRAS* Galaxies. *Y. Krongold, D. Dultzin-Hacyan, & P. Marziani*. 572, 169 (2002)
- KRZESINSKI, J. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- KUCHNER, MARC J. A Coronagraph with a Band-limited Mask for Finding Terrestrial Planets. *Marc J. Kuchner & Wesley A. Traub*. 570, 900 (2002)
- KUIPER, L. See MCCONNELL, M. L., et al. The Soft Gamma-Ray Spectral Variability of Cygnus X-1.
- KUIPER, LUCIEN. Very Low Luminosities from the Accretion-driven Millisecond X-Ray Pulsar SAX J1808.4–3658 during Quiescence. *Rudy Wijmans, Lucien Kuiper, Jean in 't Zand, Tadayasu Dotani, Michiel van der Klis, & John Heise*. 571, 429 (2002)
- KUIAT, JENS. Prospects for Determining the Equation of State of the Dark Energy: What Can Be Learned from Multiple Observables? *Jens Kujat, Anjela M. Linn, Robert J. Scherrer, & David H. Weinberg*. 572, 1 (2002)
- KULKARNI, S. R. X-Ray Timing of the Enigmatic Neutron Star RX J0720.4–3125. *D. L. Kaplan & S. R. Kulkarni*. 570, L79 (2002)
- See PRICE, P. A., et al. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow.
- See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- KULKARNI, SHRINIVAS R. X-Ray Binaries and Globular Clusters in Elliptical Galaxies. *Raymond E. White III, Craig L. Sarazin, & Shrinivas R. Kulkarni*. 571, L23 (2002)
- KULKARNI, VARSHA P. A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . V. The Extragalactic Ionizing Background at Low Redshift. *Jennifer Scott, Jill Bechtold, Miwa Morita, Adam Dobrzycki, & Varsha P. Kulkarni*. 571, 665 (2002)
- KULSRUD, RUSSELL M. Magnetized Turbulent Dynamos in Protogalaxies. *Leonid Malyskin & Russell M. Kulsrud*. 571, 619 (2002)
- KUMAR, P. Properties of Relativistic Jets in Gamma-Ray Burst Afterglows. *A. Panaitescu & P. Kumar*. 571, 779 (2002)
- KUMAR, PAWAN. Off-Axis Afterglow Emission from Jetted Gamma-Ray Bursts. *Jonathan Granot, Alin Panaitescu, Pawan Kumar, & Stan E. Woosley*. 570, L61 (2002)
- KUNSZT, PETER. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- KUROKAWA, H. The Large-Scale Coronal Field Structure and Source Region Features for a Halo Coronal Mass Ejection. *Tongjiang Wang, Yihua Yan, Jialong Wang, H. Kurokawa, & K. Shibata*. 572, 580 (2002)
- Simultaneous Observations of a Moreton Wave on 1997 November 3 in H $\alpha$  and Soft X-Rays. *N. Narukage, H. S. Hudson, T. Morimoto, S. Akiyama, R. Kitai, H. Kurokawa, & K. Shibata*. 572, L109 (2002)
- KUROKAWA, HIROKI. Emergence and Drastic Breakdown of a Twisted Flux Rope to Trigger Strong Solar Flares in NOAA Active Region 9026. *Hiroki Kurokawa, Tongjiang Wang, & Takako T. Ishii*. 572, 598 (2002)
- KUSANO, K. Numerical Study of Three-dimensional Magnetohydrodynamic Instability in the Solar Coronal Magnetic Arcades. *K. Kusano*. 571, 532 (2002)
- KUZNETSOV, SERGEY. Can Any "Invariants" Be Revealed in Quasi-periodic Phenomena Observed from Scorpius X-1? *Sergey Kuznetsov & Lev Titarchuk*. 571, L137 (2002)
- LA BARBERA, F. Optical and Near-Infrared Structural Properties of Cluster Galaxies at  $z \sim 0.3$ . *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli*. 571, 790 (2002)
- LABAY, JAVIER. Galactic Cosmic Rays from Superbubbles and the Abundances of Lithium, Beryllium, and Boron. *Andreu Alibés, Javier Labay, & Ramon Canal*. 571, 326 (2002)
- LACEY, CHRISTINA K. See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.

- LACY, JOHN H. Looking for Pure Rotational H<sub>2</sub> Emission from Protoplanetary Disks. *Matthew J. Richter, Daniel T. Jaffe, Geoffrey A. Blake, & John H. Lacy*. 572, L161 (2002)
- LADA, CHARLES J. N<sub>2</sub>H<sup>+</sup> and C<sup>18</sup> Depletion in a Cold Dark Cloud. *Edwin A. Bergin, João Alves, Tracy Huard, & Charles J. Lada*. 570, L101 (2002)
- LA FRANCA, F. The BeppoSAX High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution. *F. La Franca, F. Fiore, C. Vignali, A. Antonelli, A. Comastri, P. Giommi, G. Matt, S. Molendini, G. C. Perola, & F. Pompilio*. 570, 100 (2002)
- See COMASTRI, A., et al. The HELIAS2 XMM Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy.
- LAHAV, O. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- LAINE, SEPP. Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogle, Johan H. Knapen, Seppo Laine, Isaac Shlosman, Nick Z. Scoville, & Peter Englmaier*. 570, L55 (2002)
- LAMB, D. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- LAMB, D. Q. See MCKAY, TIMOTHY A., et al. Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws.
- See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- LAMB, DON Q. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- LAMB, DONALD Q. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- LAMBERT, DAVID L. High-Resolution Measurements of Intersystem Bands of Carbon Monoxide toward X Persei. *Yaron Sheffer, S. R. Federman, & David L. Lambert*. 572, L95 (2002)
- LANDAU, SUSANA J. Testing Theories That Predict Time Variation of Fundamental Constants. *Susana J. Landau & Hector Vucetich*. 570, 463 (2002)
- LANG, C. C. Detection of X-Ray Emission from the Arches Cluster near the Galactic Center. *F. Yusef-Zadeh, C. Law, M. Wardle, Q. D. Wang, A. Fruscione, C. C. Lang, & A. Cotera*. 570, 665 (2002)
- LANG, M. J. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- LANGE, A. E. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- LANZEROTTI, L. J. The Peak Flux Distribution of Solar Radio Bursts. *Gelu M. Nita, Dale E. Gary, L. J. Lanzerotti, & D. J. Thomson*. 570, 423 (2002)
- LANZETTA, KENNETH A. The Star Formation Rate Intensity Distribution Function: Implications for the Cosmic Star Formation Rate History of the Universe. *Kenneth A. Lanzetta, Noriaki Yahata, Sebastian Pascarelle, Hsiao-Wen Chen, & Alberto Fernández-Soto*. 570, 492 (2002)
- LARSEN, RASMUS M. Evolving Submerged Meridional Circulation Cells within the Upper Convection Zone Revealed by Ring-Diagram Analysis. *Deborah A. Haber, Bradley W. Hindman, Juri Toomre, Richard S. Bogart, Rasmus M. Larsen, & Frank Hill*. 570, 855 (2002)
- LATTANZIO, JOHN. Structure, Evolution, and Nucleosynthesis of Primordial Stars. *Lionel Stieck, Mario Livio, & John Lattanzio*. 570, 329 (2002)
- LATTER, W. B. The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte*. 570, 708 (2002)
- LAVERGNE, J. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- LAW, C. Detection of X-Ray Emission from the Arches Cluster near the Galactic Center. *F. Yusef-Zadeh, C. Law, M. Wardle, Q. D. Wang, A. Fruscione, C. C. Lang, & A. Cotera*. 570, 665 (2002)
- LAWLER, JAMES E. See COWAN, JOHN J., et al. The Chemical Composition and Age of the Metal-poor Halo Star BD +17° 3248.
- LAWRENCE, STEPHEN S. Evolution and Geometry of Hot Spots in Supernova Remnant 1987A. *Ben E. K. Sugerman, Stephen S. Lawrence, Arlin P. S. Crots, Patrice Bouchet, & Steve R. Heathcote*. 572, 209 (2002)
- LAYCOCK, SILAS. A Decade in the Life of EXO 2030+375: A Multiwavelength Study of an Accreting X-Ray Pulsar. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, Silas Laycock, & J. Fabregat*. 570, 287 (2002)
- LAZZATI, D. The Brera Multiscale Wavelet Detection Algorithm Applied to the Chandra Deep Field-South: Deeper and Deeper. *A. Moretti, D. Lazzati, S. Campana, & G. Tagliaferri*. 570, 502 (2002)
- LAZZATI, DAVIDE. Soft X-Ray Emission Lines in the Early Afterglow of Gamma-Ray Bursts. *David Lazzati, Enrico Ramirez-Ruiz, & Martin J. Rees*. 572, L57 (2002)
- LEBACH, D. E. Possible Corotation of the Milliarcsecond Radio Structure of the Close Binary HR 1099. *R. R. Ransom, N. Bartel, M. F. Bietenholz, D. E. Lebach, M. I. Ramey, I. I. Shapiro, & J.-F. Lestrade*. 572, 487 (2002)
- LEBOHEC, S. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- LEE, B. C. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- LEE, BRIAN C. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- LEE, JEONGWOO. Electron Transport during the 1999 August 20 Flare Inferred from Microwave and Hard X-Ray Observations. *Jeongwoo Lee, Dale E. Gary, Jiong Qiu, & Peter T. Gallagher*. 572, 609 (2002)
- LEE, JULIA C. The Shape of the Relativistic Iron K $\alpha$  Line from MCG -6-30-15 Measured with the Chandra High Energy Transmission Grating Spectrometer and the Rossi X-Ray Timing Explorer. *Julia C. Lee, Kazushi Iwasawa, John C. Houck, Andrew C. Fabian, Herman L. Marshall, & Claude R. Canizares*. 570, L47 (2002)
- Chandra Detection of O VIII Ly $\alpha$  Absorption from an Overdense Region in the Intergalactic Medium. *Taotao Fang, Herman L. Marshall, Julia C. Lee, David S. Davis, & Claude R. Canizares*. 572, L127 (2002)
- LE FEVRE, O. The Gravitational Lens CFRS 03.1077. *David Crampton, David Schade, F. Hammer, A. Matzkin, S. J. Lilly, & O. Le Fèvre*. 570, 86 (2002)
- LEGER, R. FRENCH. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- LEHÄR, J. Hubble Space Telescope Observations of 10 Two-Image Gravitational Lenses: Erratum (ApJ, 536, 584 [2002]). *J. Lehar, E. Falco, C. S. Kochanek, B. A. McLeod, J. A. Muñoz, C. D. Impey, H.-W. Rix, C. R. Keeton, & D. C. Y. Peng*. 571, 1021 (2002) (Orig. paper in 536, 584 (2000))
- LEIBUNDGUT, BRUNO. See PUN, CHUN S. J., et al. Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- LEMEN, J. R. Large-Scale Solar Coronal Structures in Soft X-Rays and Their Relationship to the Magnetic Flux. *E. E. Benevolenskaya, A. G. Kosovichev, J. R. Lemen, P. H. Scherrer, & G. L. Slater*. 571, L181 (2002)
- LEONARD, DOUGLAS C. See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- LEPINE, J. R. D. Corotation: Its Influence on the Chemical Abundance Pattern of the Galaxy. *Yu N. Mishurov & J. R. D. Lépine*. 571, L113 (2002)
- LESKE, R. Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopalswamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Rosenvinge*. 572, L103 (2002)
- LESSARD, R. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- LESTRADE, J.-F. Possible Corotation of the Milliarcsecond Radio Structure of the Close Binary HR 1099. *R. R. Ransom, N. Bartel, M. F. Bietenholz, D. E. Lebach, M. I. Ramey, I. I. Shapiro, & J.-F. Lestrade*. 572, 487 (2002)
- LEVINE, A. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- LEWIN, W. H. G. See MILLER, J. M., et al. Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the XMM-Newton/EPIC-pn Spectrum of XTE J1650-500.
- LEWIN, WALTER H. G. See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- LEWIS, GERAINT F. Understanding the Nature of the Optically Faint Radio Sources and Their Connection to the Submillimeter Population. *Scott C.*

- Chapman, Geraint F. Lewis, Douglas Scott, Colin Borys, & Eric Richards. 570, 557 (2002)
- LEWIS, J. R. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- LI, AIGEN. Do the Infrared Emission Features Need Ultraviolet Excitation? The Polycyclic Aromatic Hydrocarbon Model in UV-poor Reflection Nebulae. *Aigen Li & B. T. Draine*. 572, 232 (2002)
- LI, GUANGYU. The Dynamical Simulations of the Planets Orbiting GJ 876. *Jianghui Ji, Guangyu Li, & Lin Liu*. 572, 1041 (2002)
- LI, H. Poynting Jets from Accretion Disks. *R. V. E. Lovelace, H. Li, A. V. Koldoba, G. V. Ustyugova, & M. M. Romanova*. 572, 445 (2002)
- LI, XING. Heating in Coronal Funnel by Ion Cyclotron Waves. *Xing Li*. 571, L67 (2002)
- LIBBRECHT, C. See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- LILLY, S. J. The Gravitational Lens CFRS 03.1077. *David Crampton, David Schade, F. Hammer, A. Matzkin, S. J. Lilly, & O. Le Fèvre*. 570, 86 (2002)
- LIN, D. N. C. A Critical Examination of Li Pollution and Giant-Planet Consumption by a Host Star. *Eric L. Sandquist, Jon J. Dokter, D. N. C. Lin, & Rosemary A. Marling*. 572, 1012 (2002)
- LIN, HAOSHENG. A Classical Model for the Damped, Magnetic Dipole Oscillator. *Roberto Casini & Haosheng Lin*. 571, 540 (2002)
- LINDSAY, K. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- LINN, ANJELA M. Prospects for Determining the Equation of State of the Dark Energy: What Can Be Learned from Multiple Observables? *Jens Kujat, Anjela M. Linn, Robert J. Scherrer, & David H. Weinberg*. 572, 1 (2002)
- LINSKY, JEFFREY L. The Far-Ultraviolet Spectrum of TW Hydrae. I. Observations of H<sub>2</sub> Fluorescence. *Gregory J. Herczeg, Jeffrey L. Linsky, Jeff A. Valenti, Christopher M. Johns-Krull, & Brian E. Wood*. 572, 310 (2002)
- LIS, D. C. Detection of Triply Deuterated Ammonia in the Barabard I Cloud. *D. C. Lis, E. Roueff, M. Gerin, T. G. Phillips, L. H. Coudert, F. F. S. van der Tak, & P. Shilke*. 571, L55 (2002)
- LISSE, C. Discovery of an Extremely Red Object in the Field of HD 155826. *C. Lisse, A. Schultz, Y. Fernandez, S. Pecsckhe, M. Ressler, V. Gorjian, S. G. Djorgovski, D. J. Christian, B. Golisch, & C. Kaminski*. 570, 779 (2002)
- LISSE, C. M. Candidate Pre-Main-Sequence F Stars with Circumstellar Dust Identified Using Combined 2MASS and *uvby* Data. *A. A. Suchkov, A. B. Schultz, & C. M. Lisse*. 570, L29 (2002)
- LITVINENKO, YURI E. Particle Acceleration Scalings Based on Exact Analytic Models for Magnetic Reconnection. *I. J. D. Craig & Yuri E. Litvinenko*. 570, 387 (2002)
- LIU, B. F. A Simple Model for a Magnetic Reconnection-heated Corona. *B. F. Liu, S. Mineshige, & K. Shibata*. 572, L173 (2002)
- LIU, LIN. The Dynamical Simulations of the Planets Orbiting GJ 876. *Jianghui Ji, Guangyu Li, & Lin Liu*. 572, 1041 (2002)
- LIU, MICHAEL C. Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. *Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler*. 571, 519 (2002)
- LIVIO, MARIO. Structure, Evolution, and Nucleosynthesis of Primordial Stars. *Lionel Siess, Mario Livio, & John Lattanzio*. 570, 329 (2002)
- Will Jets Identify the Progenitors of Type Ia Supernovae? *Mario Livio, Adam Riess, & William Sparks*. 571, L99 (2002)
- The Effects of Planets and Brown Dwarfs on Stellar Rotation and Mass Loss. *Mario Livio & Noam Soker*. 571, L161 (2002)
- LOYD, JAMES P. Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. *Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler*. 571, 519 (2002)
- LOYD-EVANS, J. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- LODDERS, KATHARINA. Evidence of Cloud Disruption in the L/T Dwarf Transition. *Adam J. Burgasser, Mark S. Marley, Andrew S. Ackerman, Didier Saumon, Katharina Lodders, Conrad C. Dahn, Hugh C. Harris, & J. Davy Kirkpatrick*. 571, L151 (2002)
- LOEB, ABRAHAM. Dynamics of a Massive Black Hole at the Center of a Dense Stellar System. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb*. 572, 371 (2002)
- Emission of Positron Annihilation Line Radiation by Clusters of Galaxies. *Steven R. Furlanetto & Abraham Loeb*. 572, 796 (2002)
- LOESER, R. Energy Balance in the Solar Transition Region. IV. Hydrogen and Helium Mass Flows with Diffusion. *J. M. Fontenla, E. H. Avrett, & R. Loeser*. 572, 636 (2002)
- LONG, D. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- LONG, DANIEL C. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- LONG, KNOX S. The Optical Spectrum of the SN 1006 Supernova Remnant Revisited. *Parviz Ghavamian, P. Frank Winkler, John C. Raymond, & Knox S. Long*. 572, 888 (2002)
- LOPEZ ARISTE, A. The Physical Content of the Leading Orders of Principal Component Analysis of Spectral Profiles. *A. Skumanich & A. López Ariste*. 570, 379 (2002)
- LORENZETTI, DARIO. Understanding the Nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43. *Teresa Giannini, Brunella Nisini, Alessio Caratti o Garatti, & Dario Lorenzetti*. 570, L33 (2002)
- Understanding the nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43: Erratum (ApJ, 570, L33 [2002]). *Teresa Giannini, Brunella Nisini, Alessio Caratti, & Dario Lorenzetti*. 571, L195 (2002)
- LORIMER, D. R. See CAMILO, F., et al. Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope.
- LOU, YU-QING. Damping of Low-Frequency Alfvén Waves in Fast Polar Coronal Winds from the Rotating Sun. *Yu-Qing Lou*. 571, L187 (2002)
- Radio Pulses through a Magnetized Relativistic Pair Plasma Flow. *Yu-Qing Lou*. 572, L91 (2002)
- LOVAS, F. J. Interstellar Antifreeze: Ethylene Glycol. *J. M. Hollis, F. J. Lovas, P. R. Jewell, & L. H. Coudert*. 571, L59 (2002)
- LOVEDAY, JON. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DOBELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- LOVELACE, R. V. E. Poynting Jets from Accretion Disks. *R. V. E. Lovelace, H. Li, A. V. Koldoba, G. V. Ustyugova, & M. M. Romanova*. 572, 445 (2002)
- LOVELLETTE, MICHAEL N. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65.
- LOW, B. C. Quiescent Solar Prominences and Magnetic-Energy Storage. *B. Fong, B. C. Low, & Y. Fan*. 571, 987 (2002)
- LOWRANCE, PATRICK J. A Distant Stellar Companion in the  $\nu$  Andromedae System. *Patrick J. Lowrance, J. Davy Kirkpatrick, & Charles A. Beichman*. 572, L79 (2002)
- LUBIN, DAN. The UCSD HIRES/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Howk, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Lubin, & Nao Suzuki*. 571, 693 (2002)
- LUGGER, PHYLLIS M. Hubble Space Telescope/NICMOS Observations of Terzan 5: Stellar Content and Structure of the Core. *Haldan N. Cohn, Phyllis M. Lugger, Jonathan E. Grindlay, & Peter D. Edmonds*. 571, 818 (2002)
- LUHMAN, K. L. Discovery of an Edge-On Disk in the MBM 12 Young Association. *Ray Jayawardhana, K. L. Luhman, Paola D'Alessio, & John R. Stauffer*. 571, L51 (2002)
- LUNDQVIST, PETER. See PUN, CHUN S. J., et al. Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- LUPTON, ROBERT H. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.



- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- LYNE, A. G. Counterclockwise Magnetic Fields in the Norma Spiral Arm. *J. L. Han, R. N. Manchester, A. G. Lyne, & G. J. Qiao*. 570, L17 (2002)
- Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian*. 570, L89 (2002)
- MACCHETTO, F. DUCCIO. The Nuclei of Radio Galaxies in the Ultraviolet: The Signature of Different Emission Processes. *Marco Chiaberge, F. Duccio Macchetto, William B. Sparks, Alessandro Capetti, Mark G. Allen, & André R. Martel*. 571, 247 (2002)
- MACKAY, C. D. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The *H*-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- MACKENTY, JOHN W. The Extended Emission-Line Region of 4C 37.43. *Alan Stockton, John W. MacKenty, Esther M. Hu, & Tae-Sun Kim*. 572, 735 (2002)
- MAC LOW, MORDECAI-MARK. Physical versus Observational Properties of Clouds in Turbulent Molecular Cloud Models. *Javier Ballesteros-Parades & Mordecai-Mark Mac Low*. 570, 734 (2002)
- MACQUART, JEAN-PIERRE. Microarcsecond Radio Imaging Using Earth-Orbit Synthesis. *Jean-Pierre Macquart & David L. Jauncey*. 572, 786 (2002)
- MADAU, PIERO. Early Metal Enrichment by Pregalactic Outflows. II. Three-dimensional Simulations of Blow-Away. *Masan Mori, Andrea Ferrara, & Piero Madau*. 571, 40 (2002)
- MADEJSKI, GREG. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65.
- MADORE, BARRY F. The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. I. Results. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore*. 571, 56 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. II. Measurement of Foreground Zodiacal Light. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore*. 571, 85 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. III. Cosmological Implications. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore*. 571, 107 (2002)
- MADSEN, G. J. WHAM Observations of H $\alpha$  From High-Velocity Clouds: Are they Galactic or Extragalactic? *S. L. Tufte, J. D. Wilson, G. J. Madsen, L. M. Haffner, & R. J. Reynolds*. 572, L153 (2002)
- MAEDA, K. See MAZZALI, P. A., et al. The Type Ic Hypervelocity SN 2002ap.
- MAEDA, Y. A *Chandra* Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center? *Y. Maeda, F. K. Baganoff, E. D. Feigelson, M. Morris, M. W. Bautz, W. N. Brandt, D. N. Burrows, J. P. Doty, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley*. 570, 671 (2002)
- MAHABAL, A. See PRICE, P. A., et al. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow.
- MAHAJAN, SWADESH M. Energy Transformation Mechanism in the Solar Atmosphere Associated with Magnetofluid Coupling: Explosive and Eruptive Events. *Shuichi Ohsaki, Nana L. Shatashvili, Zensho Yoshida, & Swadesh M. Mahajan*. 570, 395 (2002)
- MAHROUS, A. M. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above 10<sup>19</sup> eV Estimated by the Akeno Giant Air Shower Array Experiment.
- MAIOLINO, R. See COMASTRI, A., et al. The HELIAS2 XMM Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy.
- MAJEED, TARIQ. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- MALKAN, MATTHEW A. The Far-Infrared Energy Distributions of Seyfert and Starburst Galaxies in the Local Universe: *Infrared Space Observatory* Photometry of the 12 Micron Active Galaxy Sample. *Luigi Spinoglio, Paola Andreani, & Matthew A. Malkan*. 572, 105 (2002)
- MALKOV, M. A. On the Possible Reason for Nondetection of TeV Protons in Supernova Remnants. *M. A. Malkov, P. H. Diamond, & T. W. Jones*. 571, 856 (2002)
- MALYSHKIN, LEONID. Magnetized Turbulent Dynamos in Protogalaxies. *Leonid Malyskhin & Russell M. Kulsrud*. 571, 619 (2002)
- MANCHADO, ARTURO. The Dynamical Evolution of the Circumstellar Gas around Low- and Intermediate-Mass Stars. I. The Asymptotic Giant Branch. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado*. 571, 880 (2002)
- MANCHANDA, R. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- MANCHESTER, R. N. Counterclockwise Magnetic Fields in the Norma Spiral Arm. *J. L. Han, R. N. Manchester, A. G. Lyne, & G. J. Qiao*. 570, L17 (2002)
- Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian*. 570, L89 (2002)
- MARASCHI, L. A Survey of Extended Radio Jets in Active Galactic Nuclei with *Chandra* and the Hubble Space Telescope: First Results. *Rita M. Sambruna, L. Maraschi, F. Tavecchio, C. Megan Urry, C. C. Cheung, G. Chartas, R. Scarpa, & Jessica K. Gambill*. 571, 206 (2002)
- See ZHANG, Y. H., et al. Four Years of Monitoring Blazar PKS 2155-304 with BeppoSAX: Probing the Dynamics of the Jet.
- MARCY, GEOFF W. Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. *Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler*. 571, 519 (2002)
- MARCY, GEOFFREY W. New Submillimeter Limits on Dust in the 55 Cancri Planetary System. *Ray Jayawardhana, Wayne S. Holland, Paul Kalas, Jane S. Greaves, William R. F. Dent, Mark C. Wyatt, & Geoffrey W. Marcy*. 570, L93 (2002)
- Two Extrasolar Planets from the Anglo-Australian Planet Search. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, & Brad D. Carter*. 571, 528 (2002)
- MARDLING, ROSEMARY A. A Critical Examination of Li Pollution and Giant-Planet Consumption by a Host Star. *Eric L. Sandquist, Jon J. Dokter, D. N. C. Lin, & Rosemary A. Mardling*. 572, 1012 (2002)
- MARKEVITCH, MAXIM. See GREEN, PAUL J., et al. *Chandra* Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens?
- MARLEY, MARK S. Evidence of Cloud Disruption in the L/T Dwarf Transition. *Adam J. Burgasser, Mark S. Morley, Andrew S. Ackerman, Didier Saumon, Katharina Lodders, Conard C. Dahn, Hugh C. Harris, & J. Davy Kirkpatrick*. 571, L151 (2002)
- MARSHALL, HERMAN L. The Shape of the Relativistic Iron K $\alpha$  Line from MCG -6-30-15 Measured with the *Chandra* High Energy Transmission Grating Spectrometer and the Rossi X-Ray Timing Explorer. *Julia C. Lee, Kazushi Iwasawa, John C. Houck, Andrew C. Fabian, Herman L. Marshall, & Claude R. Canizares*. 570, L47 (2002)
- See DRAKE, JEREMY J., et al. Is RX J1856.5-3754 a Quark Star? *Chandra* Detection of O VIII Ly $\alpha$  Absorption from an Overdense Region in the Intergalactic Medium. *Taotao Fang, Herman L. Marshall, Julia C. Lee, David S. Davis, & Claude R. Canizares*. 572, L127 (2002)
- MARTEL, ANDRÉ R. The Nuclei of Radio Galaxies in the Ultraviolet: The Signature of Different Emission Processes. *Marco Chiaberge, F. Duccio Macchetto, William B. Sparks, Alessandro Capetti, Mark G. Allen, & André R. Martel*. 571, 247 (2002)
- MARTEL, F. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- MARTEL, HUGO. Light Propagation in Inhomogeneous Universes. III. Distributions of Image Separations. *Hugo Martel, Premana Premadi, & Richard Matzner*. 570, 17 (2002)
- On the Direct Detectability of the Cosmic Dark Ages: 21 Centimeter Emission from Minihalos. *Ilian T. Iliev, Paul R. Shapiro, Andrea Ferrara, & Hugo Martel*. 572, L123 (2002)
- MARTIN, R. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- MARTINI, P. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The *H*-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- MARTINIS, L. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- MARZIANI, P. Searching for the Physical Drivers of Eigenvector 1: From Quasars to Nanoquasars. *R. Zamanov & P. Marziani*. 571, L77 (2002)
- The Circumgalactic Environment of Bright IRAS Galaxies. *Y. Krongold, D. Dulzín-Hacyan, & P. Marziani*. 572, 169 (2002)
- MARZKE, R. O. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The *H*-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.

- MASAI, KUNIAKI. ASCA Observations of the Supernova Remnant IC 443: Thermal Structure and Detection of Overionized Plasma. *Masahiro T. Kawasaki, Masanobu Ozaki, Fumiaki Nagase, Kuniaki Masai, Manabu Ishida, & Robert Petre*. 572, 897 (2002)
- MASE, K. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- MASI, S. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.  
See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- MASON, KEITH O. On the X-Ray Source Luminosity Distributions in the Bulge and Disk of M31: First Results from the XMM-Newton Survey. *Sergey P. Trudolyubov, Konstantin N. Borozdin, William C. Priedhorsky, Keith O. Mason, & France A. Cordova*. 571, L17 (2002)
- MASON, P. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- MASSAROTTI, M. Optical and Near-Infrared Structural Properties of Cluster Galaxies at  $z \sim 0.3$ . *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli*. 571, 790 (2002)
- MATHUR, SMITA. Chandra Detection of Highest Redshift ( $z \sim 6$ ) Quasars in X-Rays. *Smita Mathur, Belinda J. Wilkes, & Himel Ghosh*. 570, L5 (2002)
- MATSUOKA, M. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- MATT, G. See LA FRANCA, F., et al. The BeppoSAX High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution.  
See COMASTRI, A., et al. The HELIAS2 XMM Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy.
- MATTHEWS, BRENDA C. Magnetic Fields in Star-forming Molecular Clouds. IV. Polarimetry of the Filamentary NGC 2068 Cloud in Orion B. *Brenda C. Matthews & Christine D. Wilson*. 571, 356 (2002)
- MATTOX, J. R. ASCA View of the Supernova Remnant  $\gamma$  Cygni (G78.2+2.1): Bremsstrahlung X-Ray Spectrum from Loss-flattened Electron Distribution. *Y. Uchiyama, T. Takahashi, F. A. Aharonian, & J. R. Mattox*. 571, 866 (2002)
- MATZKIN, A. The Gravitational Lens CFRS 03.1077. *David Crampton, David Schade, F. Hammer, A. Matzkin, S. J. Lilly, & O. Le Fèvre*. 570, 86 (2002)
- MATZNER, RICHARD. Light Propagation in Inhomogeneous Universes. III. Distributions of Image Separations. *Hugo Martel, Premana Premadi, & Richard Matzner*. 570, 17 (2002)
- MAUSKOPF, P. D. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.  
See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- MAZZALI, P. A. The Type Ic Hypernova SN 2002ap. *P. A. Mazzali, J. Deng, K. Maeda, K. Nomoto, H. Umeda, K. Hatano, K. Iwamoto, Y. Yoshii, Y. Kobayashi, T. Minezaki, M. Doi, K. Enya, H. Tomita, S. J. Smartt, K. Kingutsu, H. Kawakita, K. Ayani, T. Kawabata, H. Yamaoka, Y. L. Qiu, K. Motohara, C. L. Gerardy, R. Fesen, K. S. Kawabata, M. Iye, N. Kashikawa, G. Kosugi, Y. Ohyama, M. Takada-Hidai, G. Zhao, R. Chornock, A. V. Filippenko, S. Benetti, & M. Turatto*. 572, L61 (2002)
- MCCARTHY, CHRIS. Two Extrasolar Planets from the Anglo-Australian Planet Search. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, & Brad D. Carter*. 571, 528 (2002)
- MCCARTHY, P. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- MCCARTHY, P. J. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.  
See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 01121.
- MCCINTOCK, JEFFREY E. The X-Ray Spectra of Black Hole X-Ray Novae in Quiescence as Measured by Chandra. *Albert K. H. Kong, Jeffrey E. McClintock, Michael R. Garcia, Stephen S. Murray, & Didier Barret*. 570, 277 (2002)
- MCCOLLOUGH, M. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- MCCONNELL, M. L. The Soft Gamma-Ray Spectral Variability of Cygnus X-1. *M. L. McConnell, A. A. Zdziarski, K. Bennett, H. Bloemen, W. Collmar, W. Hermsen, L. Kuiper, W. Paciesas, B. F. Philips, J. Poutanen, J. M. Ryan, V. Schönfelder, H. Steinle, & A. W. Strong*. 572, 984 (2002)
- MCCRAY, RICHARD. See PUN, CHUN S. J., et al. Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- MCDONALD, PATRICK. Evolution of the Ionizing Radiation Background and Star Formation in the Aftermath of Cosmological Reionization. *Renyue Cen & Patrick McDonald*. 570, 457 (2002)
- MCGRATH, MELISSA A. The Abundance of Atomic Sulfur in the Atmosphere of Io. *Lori M. Feaga, Melissa A. McGrath, & Paul D. Feldman*. 570, 439 (2002)
- McKAY, TIMOTHY. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- McKAY, TIMOTHY A. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.  
See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.  
Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws. *Timothy A. McKay, Erin Scott Sheldon, David Johnston, Eva K. Grebel, Francisco Prada, Hans-Walter Rix, Neta A. Bahcall, J. Brinkmann, István Csabai, Masataka Fukuguita, D. Q. Lamb, & Donald G. York*. 571, L85 (2002)
- McKERNAN, B. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- McLAUGHLIN, M. A. See CAMILO, F., et al. Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope.
- McLEOD, B. A. See LEHAR, J., et al. Hubble Space Telescope Observations of 10 Two-Image Gravitational Lenses: Erratum (ApJ, 536, 584 [2002]).  
See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- McMAHON, R. G. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- McMULLIN, JOSEPH P. CO Isotopes in Planetary Nebulae. *Dana S. Balser, Joseph P. McMullin, & T. L. Wilson*. 572, 326 (2002)
- MEABURN, J. MERLIN Radio Detection of an Interaction Zone within a Binary Orion Proplyd System. *M. F. Graham, J. Meaburn, S. T. Garrington, T. J. O'Brien, W. J. Henney, & C. R. O'Dell*. 570, 222 (2002)
- MEDIAVILLA, E. See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- MEIKLE, W. P. S. On the Progenitor of the Type Ic Supernova 2002ap. *S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen*. 572, L147 (2002)
- MEIKSIN, AVERY. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.  
See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- MEIXNER, MARGARET. Two Subclasses of Proto-Planetary Nebulae: Model Calculations. *Margaret Meixner, Toshiya Ueta, Matthew Bobrowsky, & Angela Speck*. 571, 936 (2002)
- MELCHIORRI, A. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.  
See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- MENZIES, J. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.  
See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- MERLUZZI, P. Optical and Near-Infrared Structural Properties of Cluster Galaxies at  $z \sim 0.3$ . *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli*. 571, 790 (2002)
- MERRELLI, ARONNE. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- MÉSZÁROS, PETER. Gamma-Ray Burst Beaming: A Universal Configuration with a Standard Energy Reservoir? *Bing Zhang & Peter Mészáros*. 571, 876 (2002)
- METZGER, ALBERT E. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.

- MICHAEL, ELI. See PUN, CHUN S. J., et al. Modeling the *Hubble Space Telescope* Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- MICHAŁEK, G. Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopalswamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Rosenvinge.* 572, L103 (2002)
- MICHAUD, G. Models of Metal-poor Stars with Gravitational Settling and Radiative Accelerations. II. The Age of the Oldest Stars. *Don A. Vandenberg, O. Richard, G. Michaud, & J. Richer.* 571, 487 (2002)
- MIGNOLI, M. See COMASTRI, A., et al. The HELLAS2 *XMM* Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy.
- MILGROM, MORDEHAI. Do Modified Newtonian Dynamics Follow from the Cold Dark Matter Paradigm? *Mordehai Milgrom.* 571, L81 (2002)
- MILLER, J. M. Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the *XMM-Newton*/EPIC-pn Spectrum of XTE J1650–500. *J. M. Miller, A. C. Fabian, R. Wijnands, C. S. Reynolds, M. Ehle, M. J. Freyberg, M. Van Der Klis, W. H. G. Lewin, C. Sanchez-Fernandez, & A. J. Castro-Tirado.* 570, L69 (2002)
- MILLER, JON M. See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- MILLER, L. Discovery of Radio-loud Broad Absorption Line Quasars Using Ultraviolet Excess and Deep Radio Selection: Erratum (ApJ, 505, L17 [1998]). *M. S. Brotherton, W. van Breugel, R. J. Smith, B. J. Boyle, T. Shanks, S. M. Croom, L. Miller, & R. H. Becker.* 571, L191 (2002)
- MILLER, MARK A. Three-dimensional Hydrodynamic Simulations of Relativistic Extragalactic Jets. *Philip A. Hughes, Mark A. Miller, & G. Comer Duncan.* 572, 713 (2002)
- MINESHIGE, S. A Simple Model for a Magnetic Reconnection-heated Corona. *B. F. Liu, S. Mineshige, & K. Shibata.* 572, L173 (2002)
- MINEZAKI, T. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- MIRABEL, F. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- MISHUROV, YU N. Corotation: Its Influence on the Chemical Abundance Pattern of the Galaxy. *Yu N. Mishurov & J. R. D. Lépine.* 571, L113 (2002)
- MIZOBUCHI, S. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- MIZUNO, DONALD R. An Infrared Ring Nebula around MSX5C G358.5391+00.1305: The True Nature of Suspected Planetary Nebula Wray 17-96 Determined via Direct Imaging and Spectroscopy. *Michael P. Egan, J. Simon Clark, Donald R. Mizuno, Sean J. Carey, Iain A. Steele, & Stephan D. Price.* 572, 288 (2002)
- MO, HOUJUN J. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- MOFFAT, A. F. J. Australia Telescope Compact Array Radio Imaging of the Proplyd-like Objects in the Giant H II Region NGC 3603. *A. Mücke, B. S. Koribalski, A. F. J. Moffat, M. F. Corcoran, & I. R. Stevens.* 571, 366 (2002)
- MOHANTY, SUBHANJOY. Activity in Very Cool Stars: Magnetic Dissipation in Late M and L Dwarf Atmospheres. *Subhanjoy Mohanty, Gibor Basri, Frank Shu, France Allard, & Gilles Chabrier.* 571, 469 (2002)
- MOLENDI, S. See LA FRANCA, F., et al. The BeppoSAX High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution.
- See COMASTRI, A., et al. The HELLAS2 *XMM* Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy.
- MOLENDO, SILVANO. Abundance Gradients and the Role of Supernovae in M87. *Fabio Gastaldello & Silvano Molendo.* 572, 160 (2002)
- MOLINARI, SERGIO. The Formation of Massive Stars. I. High-Resolution Millimeter and Radio Studies of High-Mass Protostellar Candidates. *Sergio Molinari, Leonardo Testi, Luis F. Rodriguez, & Qizhou Zhang.* 570, 758 (2002)
- MOLNAR, S. M. Constraints in Cosmological Parameter Space from the Sunyaev-Zeldovich Effect and Thermal Bremsstrahlung. *S. M. Molnar, M. Birkinshaw, & R. F. Mushotzky.* 570, 1 (2002)
- MOLTZ, D. M. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- MONNELLY, G. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- MONTANARI, E. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- MONTROY, T. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- MOREAU, O. See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- MORETTI, A. The Brera Multiscale Wavelet Detection Algorithm Applied to the *Chandra* Deep Field-South: Deeper and Deeper. *A. Moretti, D. Lazzati, S. Campana, & G. Tagliaferri.* 570, 502 (2002)
- MORGAN, E. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- MORGANTI, R. See COMASTRI, A., et al. The HELLAS2 *XMM* Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy.
- MORI, MASAO. Early Metal Enrichment by Pregalactic Outflows. II. Three-dimensional Simulations of Blow-Away. *Masao Mori, Andrea Ferrara, & Piero Madau.* 571, 40 (2002)
- MORIARTY, P. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- MORIMOTO, T. Simultaneous Observations of a Moreton Wave on 1997 November 3 in H $\alpha$  and Soft X-Rays. *N. Narukage, H. S. Hudson, T. Morimoto, S. Akiyama, R. Kitai, H. Kurokawa, & K. Shibata.* 572, L109 (2002)
- MORITA, MIWA. A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . IV. The Clustering and Evolution of Clouds at  $z \leq 1.7$ . *Adam Dobrzycki, Jill Bechtold, Jennifer Scott, & Miwa Morita.* 571, 654 (2002)
- A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . V. The Extragalactic Ionizing Background at Low Redshift. *Jennifer Scott, Jill Bechtold, Miwa Morita, Adam Dobrzycki, & Varsha P. Kulkarni.* 571, 665 (2002)
- MORIZANE, Y. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- MORRIS, M. See MAEDA, Y., et al. A *Chandra* Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center?
- MORSINK, SHARON M. Nonlinear Couplings between  $r$ -Modes of Rotating Neutron Stars. *Sharon M. Morsink.* 571, 435 (2002)
- MOTOHARA, K. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- MOTTA, V. See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- MOTTE, F. The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte.* 570, 708 (2002)
- MÜCKE, A. Australia Telescope Compact Array Radio Imaging of the Proplyd-like Objects in the Giant H II Region NGC 3603. *A. Mücke, B. S. Koribalski, A. F. J. Moffat, M. F. Corcoran, & I. R. Stevens.* 571, 366 (2002)
- MÜCKET, J. P. The Scale-dependent Energy Transfer Rate as a Tracer for Star Formation in Cosmological N-Body Simulations. *M. Hoeft, J. P. Mücke, & P. Heide.* 570, 33 (2002)
- MUKHERJEE, R. EG J2016+3657: Confirming an EGRET Blazar behind the Galactic Plane: Erratum (ApJ, 551, 1016 [2001]). *J. P. Halpern, M. Eracleous, R. Mukherjee, & E. V. Gotthelf.* 572, 693 (2002) (Orig. paper in 551, 1016 (2001))
- MUKAI, T. See ISHIGURO, M., et al. First Detection of an Optical Dust Trail along the Orbit of 22P/Kopff.
- MULLER, D. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- MULLER, P. See CAMILO, F., et al. Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope.
- MUNN, JEFF. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- MUNN, JEFFREY A. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- MUÑOZ, J. A. See LEHAR, J., et al. *Hubble Space Telescope* Observations of 10 Two-Image Gravitational Lenses: Erratum (ApJ, 536, 584 [2002]).

- See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- MUNSHI, DIPAK. A Universal Probability Distribution Function for Weak-lensing Amplification. *Yun Wang, Daniel E. Holz, & Dipak Munshi*. 572, L15 (2002)
- MURALI, CHIGURUPATI. The Growth of Galaxies in Cosmological Simulations of Structure Formation. *Chigurupati Murali, Neal Katz, Lars Hernquist, David H. Weinberg, & Romeel Davé*. 571, 1 (2002)
- MURPHY, D. C. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- MURRAY, S. S. Bright X-Ray Sources in M31 Globular Clusters. *R. Di Stefano, A. K. H. Kong, M. R. Garcia, P. Barmby, J. Greiner, S. S. Murray, & F. A. Primiini*. 570, 618 (2002)
- MURRAY, STEPHEN S. The X-Ray Spectra of Black Hole X-Ray Novae in Quiescence as Measured by Chandra. *Albert K. H. Kong, Jeffrey E. McClintock, Michael R. Garcia, Stephen S. Murray, & Didier Barret*. 570, 277 (2002)
- New Constraints on Neutron Star Cooling from Chandra Observations of 3C 58. *Patrick O. Slane, David J. Helfand, & Stephen S. Murray*. 571, L45 (2002)
- MUSHOTZKY, R. F. Constraints in Cosmological Parameter Space from the Sunyaev-Zeldovich Effect and Thermal Bremsstrahlung. *S. M. Molnar, M. Birkshaw, & R. F. Mushotzky*. 570, 1 (2002)
- See GEORGE, I. M., et al. The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516.
- MUSIELAK, Z. E. Orbital Stability of Terrestrial Planets inside the Habitable Zones of Extrasolar Planetary Systems. *M. Noble, Z. E. Musielak, & M. Cuntz*. 572, 1024 (2002)
- MYERS, PHILIP C. Dense Cores in Dark Clouds. XIV. N<sub>2</sub>H<sup>+</sup> (1–0) Maps of Dense Cloud Cores. *Paola Caselli, Priscilla J. Benson, Philip C. Myers, & Mario Tafalla*. 572, 238 (2002)
- NAAB, THORSTEN. The Validity of the Adiabatic Contraction Approximation for Dark Matter Halos. *Ronald Jessiet, Thorsten Naab, & Andreas Burkert*. 571, L89 (2002)
- NAGANO, N. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above 10<sup>19</sup> eV Estimated by the Akeno Giant Air Shower Array Experiment.
- NAGASE, FUMIAKI. ASCA Observations of the Supernova Remnant IC 443: Thermal Structure and Detection of Overionized Plasma. *Masahiro T. Kawasaki, Masanobu Ozaki, Fumiaki Nagase, Kuniaki Masai, Manabu Ishida, & Robert Petre*. 572, 897 (2002)
- NAKAJIMA, H. A Nonthermal Collimated Ejection Observed with the Nobeyama Radioheliograph. *H. Nakajima & T. Yokoyama*. 570, L41 (2002)
- NAKAMURA, R. See ISHIGURO, M., et al. First Detection of an Optical Dust Trail along the Orbit of 22P/Kopff.
- NAKAMURA, TAKASHI. A Possible Origin of Lognormal Distributions in Gamma-Ray Bursts. *Kunihito Ioka & Takashi Nakamura*. 570, L21 (2002)
- X-Ray Flashes from Off-Axis Gamma-Ray Bursts. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura*. 571, L31 (2002)
- NAKAR, E. Gamma-Ray Burst Light Curves—Another Clue on the Inner Edge. *E. Nakar & T. Piran*. 572, L139 (2002)
- NANDRA, K. The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra*. 571, 256 (2002)
- See GEORGE, I. M., et al. The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516.
- NARAYANAN, VUAY. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- NARAYANAN, VUAY K. See DOBELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- NARUKAGE, N. Simultaneous Observations of a Moreton Wave on 1997 November 3 in H $\alpha$  and Soft X-Rays. *N. Narukage, H. S. Hudson, T. Morimoto, S. Akiyama, R. Kitai, H. Kurokawa, & K. Shibata*. 572, L109 (2002)
- NATARAJAN, P. First Stars, Very Massive Black Holes, and Metals. *R. Schneider, A. Ferrara, P. Natarajan, & K. Omukai*. 571, 30 (2002)
- NATOLI, P. See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- NATTA, A. A Young Very Low Mass Object Surrounded by Warm Dust. *L. Testi, A. Natta, E. Oliva, F. D'Antona, F. Comeron, C. Baffa, G. Comoretto, & S. Gennari*. 571, L155 (2002)
- NEILSEN, E. H. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- NEMIROFF, R. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- NENKOVA, MAIA. Dust Emission from Active Galactic Nuclei. *Maia Nenкова, Željko Ivezić, & Moshe Elitzur*. 570, L9 (2002)
- NETTERFIELD, C. B. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background. *C. B. Netterfield, P. A. R. Ade, J. J. Bock, J. R. Bond, J. Borrill, A. Boscaleri, K. Coble, C. R. Contaldi, B. P. Crill, P. de Bernardis, P. Farese, K. Ganga, M. Giacometti, E. Hivon, V. V. Hristov, A. Iacoangeli, A. H. Jaffe, W. C. Jones, A. E. Lange, L. Martinis, S. Masi, P. Mason, P. D. Mauskopf, A. Melchiorri, T. Montroy, E. Pascale, F. Piacentini, D. Pogosyan, F. Pongetti, S. Prunet, G. Romeo, J. E. Ruhl, & F. Scaramuzzi*. 571, 604 (2002)
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- NETZER, H. See GEORGE, I. M., et al. The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516.
- NETZER, HAGAI. Inner-Shell 1s–2p Soft X-Ray Absorption Lines. *Ehud Behar & Hagai Netzer*. 570, 165 (2002)
- The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra*. 571, 256 (2002)
- NEWBERG, H. J. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- NEWCOMB, MATT. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- NEWMAN, P. R. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- NEZRICK, F. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- NICASTRO, F. Ubiquitous Variability of X-Ray-absorbing Column Densities in Seyfert 2 Galaxies. *G. Risaliti, M. Elvis, & F. Nicastro*. 571, 234 (2002)
- NICASTRO, FABRIZIO. See DRAKE, JEREMY J., et al. Is RX J1856.5–3754 a Quark Star?
- NICHOL, ROBERT C. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DOBELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- NIEL, M. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- NISINI, BRUNELLA. Understanding the Nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43. *Teresa Giannini, Brunella Nisini, Alessio Caratti, & Dario Lorenzetti*. 570, L33 (2002)
- Understanding the nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43: Erratum (ApJ, 570, L33 [2002]). *Teresa Giannini, Brunella Nisini, Alessio Caratti, & Dario Lorenzetti*. 571, L195 (2002)
- NITA, GELU M. The Peak Flux Distribution of Solar Radio Bursts. *Gelu M. Nita, Dale E. Gary, L. J. Lanzetta, & D. J. Thomson*. 570, 423 (2002)
- NITTA, A. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- NOBLE, M. Orbital Stability of Terrestrial Planets inside the Habitable Zones of Extrasolar Planetary Systems. *M. Noble, Z. E. Musielak, & M. Cuntz*. 572, 1024 (2002)
- NOMOTO, K. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- NOMOTO, KEN'ICHI. See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- NONINO, MARIO. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- NORDGREN, T. E. The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. *J. P. Aufdenberg, P. H. Hauschildt, E. Baron,*



- T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry. 570, 344 (2002)
- NORDLUND, ÅKE. Bulk Heating and Slender Magnetic Loops in the Solar Corona. *Boris Vilhelm Gudiksen & Åke Nordlund*. 572, L113 (2002)
- NORMAN, COLIN. A Classic Type 2 Quasar. *Colin Norman, Guenther Hasinger, Riccardo Giacconi, Roberto Gilli, Lisa Kewley, Mario Nonino, Piero Rosati, Gyula Szokoly, Paolo Tozzi, Junxian Wang, Wei Zheng, Andrew Zirm, Jacqueline Bergeron, Roberto Gilmozzi, Norman Grogan, Anton Koekemoer, & Ethan Schreier*. 571, 218 (2002)
- NORMAN, MICHAEL L. Cosmological Hydrogen Reionization with Three-dimensional Radiative Transfer. *Alexei O. Razoumov, Michael L. Norman, Tom Abel, & Douglas Scott*. 572, 695 (2002)
- NUMMELIN, A. Survey Observations of  $c\text{-C}_2\text{H}_4\text{O}$  and  $\text{CH}_3\text{CHO}$  toward Massive Star-forming Regions: Erratum (ApJ, 560, 792 [2001]). *M. Ikeda, M. Ohishi, A. Nummelin, J. E. Dickens, P. Bergman, Å. Hjalmarson, & W. M. Irvine*. 571, 560 (2002) (Orig. paper in 560, 792 (2001))
- O'BRIEN, T. J. MERLIN Radio Detection of an Interaction Zone within a Binary Orion Proplyd System. *M. F. Graham, J. Meaburn, S. T. Garrington, T. J. O'Brien, W. J. Henney, & C. R. O'Dell*. 570, 222 (2002)
- O'CONNELL, LIAM. See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DOBELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- O'DELL, C. R. MERLIN Radio Detection of an Interaction Zone within a Binary Orion Proplyd System. *M. F. Graham, J. Meaburn, S. T. Garrington, T. J. O'Brien, W. J. Henney, & C. R. O'Dell*. 570, 222 (2002)
- OEMLER, A. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- OHISHI, M. Survey Observations of  $c\text{-C}_2\text{H}_4\text{O}$  and  $\text{CH}_3\text{CHO}$  toward Massive Star-forming Regions: Erratum (ApJ, 560, 792 [2001]). *M. Ikeda, M. Ohishi, A. Nummelin, J. E. Dickens, P. Bergman, Å. Hjalmarson, & W. M. Irvine*. 571, 560 (2002) (Orig. paper in 560, 792 (2001))
- OHOKA, H. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- OHSAKI, SHUICHI. Energy Transformation Mechanism in the Solar Atmosphere Associated with Magnetofluid Coupling: Explosive and Eruptive Events. *Shuichi Ohsaki, Nana L. Shatashvili, Zensho Yoshida, & Swadesh M. Mahajan*. 570, 395 (2002)
- OHYAMA, Y. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- OLIVA, E. A Young Very Low Mass Object Surrounded by Warm Dust. *L. Testi, A. Natta, E. Oliva, F. D'Antona, F. Comeron, C. Baffa, G. Comoretto, & S. Gennari*. 571, L155 (2002)
- OLIVE, J. F. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- O'MEARA, JOHN M. The UCSD HRES/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Hewitt, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Rubin, & Nao Suzuki*. 571, 693 (2002)
- OMUKAI, K. First Stars, Very Massive Black Holes, and Metals. *R. Schneider, A. Ferrara, P. Natarajan, & K. Omukai*. 571, 30 (2002)
- ONG, R. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- ONKEN, CHRISTOPHER A. The Mass of the Central Black Hole in the Seyfert Galaxy NGC 3783. *Christopher A. Onken & Bradley M. Peterson*. 572, 746 (2002)
- ORIGLIA, LIVIA. ISOCAM Observations of Galactic Globular Clusters: Mass Loss along the Red Giant Branch. *Livia Origlia, Francesco R. Ferraro, Flavio Fusi Pecci, & Robert T. Rood*. 571, 458 (2002)
- OSCOZ, A. See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- OSONE, S. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- VSTENSEN, ROY. See HJORTH, JENS, et al. The Time Delay of the Quadrupole Quasar RX J0911.4+0551.
- OSTRIKER, EVE C. Formation and Fragmentation of Gaseous Spurs in Spiral Galaxies. *Woong-Tae Kim & Eve C. Ostriker*. 570, 132 (2002)
- OSTRIKER, JEREMIAH P. Observational Constraints on the Self-interacting Dark Matter Scenario and the Growth of Supermassive Black Holes. *Joseph F. Hennawi & Jeremiah P. Ostriker*. 572, 41 (2002)
- OSWALT, TERRY D. A Determination of the Local Density of White Dwarf Stars. *J. B. Holberg, Terry D. Oswalt, & E. M. Sion*. 571, 512 (2002)
- OTTE, B. Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Otte, J. S. Gallagher III, & R. J. Reynolds*. 572, 823 (2002)
- OWEN, RUSSELL. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- OZAKI, MASANOBU. ASCA Observations of the Supernova Remnant IC 443: Thermal Structure and Detection of Overionized Plasma. *Masahiro T. Kawasaki, Masanobu Ozaki, Fumiaki Nagase, Kuniaki Masai, Manabu Ishida, & Robert Petre*. 572, 897 (2002)
- PACIESAS, W. See MCCONNELL, M. L., et al. The Soft Gamma-Ray Spectral Variability of Cygnus X-1.
- PALLASSINI, R. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- PANAGIA, NINO. See PUN, CHUN S. J., et al. Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- PANAITESCU, A. Properties of Relativistic Jets in Gamma-Ray Burst Afterglows. *A. Panaitescu & P. Kumar*. 571, 779 (2002)
- PANAITESCU, ALIN. Off-Axis Afterglow Emission from Jetted Gamma-Ray Bursts. *Jonathan Granot, Alin Panaitescu, Pawan Kumar, & Stan E. Woosley*. 570, L61 (2002)
- PANASYUK, A. V. Empirical Densities, Kinetic Temperatures, and Outflow Velocities in the Equatorial Streamer Belt at Solar Minimum. *L. Strachan, R. Suleiman, A. V. Panasyuk, D. A. Biesecker, & J. L. Kohl*. 571, 1008 (2002)
- PAPALOIZOU, JOHN C. B. Three-dimensional Magnetohydrodynamic Simulations of an Accretion Disk with Star-Disk Boundary Layer. *Adriane Steinacker & John C. B. Papaloizou*. 571, 413 (2002)
- PARK, H. S. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921. *H. S. Park, G. G. Williams, D. H. Hartmann, D. Q. Lamb, B. C. Lee, D. L. Tucker, S. Klose, B. Stecklum, A. Henden, J. Adelman, S. D. Barthelmy, J. W. Briggs, J. Brinkmann, B. Chen, T. Cline, I. Csabai, N. Gehrels, M. Harvanek, G. S. Hennessy, K. Hurley, Željko Ivezić, S. Kent, S. J. Kleinman, J. Krzesinski, K. Lindsay, D. Long, R. Nemiroff, E. H. Neilsen, A. Nitta, H. J. Newberg, P. R. Newman, D. Perez, W. Periera, D. P. Schneider, S. A. Snedden, C. Stoughton, D. E. Vanden Berk, D. York, & K. Zieck*. 571, L131 (2002)
- PARNELL, CLARE E. Nanoflare Statistics from First Principles: Fractal Geometry and Temperature Synthesis. *Markus J. Aschwanden & Clare E. Parnell*. 572, 1048 (2002)
- PASCALE, E. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- PASCARELLE, SEBASTIAN. The Star Formation Rate Intensity Distribution Function: Implications for the Cosmic Star Formation Rate History of the Universe. *Kenneth A. Lanzetta, Noriaki Yahata, Sebastian Pascarelle, Hsiao-Wen Chen, & Alberto Fernández-Soto*. 570, 492 (2002)
- PASTORIZA, M. G. The O I Line Emission in Active Galactic Nuclei Revisited. *A. Rodríguez-Ardila, S. M. Viegas, M. G. Pastoriza, L. Prato, & Carlos J. Donzelli*. 572, 94 (2002)
- PEASE, DERON O. See DRAKE, JEREMY J., et al. Is RX J1856.5-3754 a Quark Star?
- PECSCHKE, S. See LISSE, C., et al. Discovery of an Extremely Red Object in the Field of HD 155826.
- PELT, JAAN. See HJORTH, JENS, et al. The Time Delay of the Quadrupole Quasar RX J0911.4+0551.
- PENDLETON, Y. J. Hydrocarbons, Ices, and "XCN" in the Line of Sight toward the Galactic Center. *J. E. Chiar, A. J. Adamson, Y. J. Pendleton, D. C. B. Whittet, D. A. Caldwell, & E. L. Gibb*. 570, 198 (2002)
- PENG, D. C. Y. See LEHAR, J., et al. Hubble Space Telescope Observations of 10 Two-Image Gravitational Lenses: Erratum (ApJ, 536, 584 [2002]).
- PENG, H. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- PENNY, ALAN J. Two Extrasolar Planets from the Anglo-Australian Planet Search. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, & Brad D. Carter*. 571, 528 (2002)

- PEOPLES, JOHN. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- PEREZ, D. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- PERIERA, W. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- PERNA, ROSALBA. Short Gamma-Ray Bursts and Mergers of Compact Objects: Observational Constraints. *Rosalba Perna & Krzysztof Belczynski*. 570, 252 (2002)
- PEROLA, G. C. See LA FRANCA, F., et al. The *BeppoSAX* High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution.
- See COMASTRI, A., et al. The *HELLAS2 XMM* Survey. II. Multiwavelength Observations of P3: An X-Ray–bright, Optically Inactive Galaxy.
- PERSSON, S. E. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The *H-Band* Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- PESTANA, JOSÉ LUIS G. Technique for Modeling the Gravitational Field of a Galactic Disk. *Donald H. Eckhardt & José Luis G. Pestaña*. 572, L135 (2002)
- PETERSON, BRADLEY M. The Mass of the Central Black Hole in the Seyfert Galaxy NGC 3783. *Christopher A. Onken & Bradley M. Peterson*. 572, 746 (2002)
- PETRE, ROBERT. *ASCA* Observations of the Supernova Remnant IC 443: Thermal Structure and Detection of Overionized Plasma. *Masahiro T. Kawasaki, Masanobu Ozaki, Fumiaki Nagase, Kuniaki Masai, Manabu Ishida, & Robert Petre*. 572, 897 (2002)
- PETRY, D. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- PETTINI, MAX. The Kinematic Connection between Absorbing Gas toward QSOs and Galaxies at Intermediate Redshift. *Charles C. Steidel, Juna A. Kollmeier, Alice E. Shapley, Christopher W. Churchill, Mark Dickinson, & Max Pettini*. 570, 526 (2002)
- PFÄHL, ERIC. On the Population of Wind-Accreting Neutron Stars in the Galaxy. *Eric Pfah, Sual Rappaport, & Phillip Podsiadlowski*. 571, L37 (2002)
- PFEIFFER, BERND. See COWAN, JOHN J., et al. The Chemical Composition and Age of the Metal-poor Halo Star BD +17° 3248.
- PHILLIPS, B. F. See MCCONNELL, M. L., et al. The Soft Gamma-Ray Spectral Variability of Cygnus X-1.
- PHILLIPS, ANDREW. See IM, MYUNGSHIN, et al. The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ .
- PHILLIPS, M. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- PHILLIPS, M. M. See PUN, CHUN S. J., et al. Modeling the *Hubble Space Telescope* Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- PHILLIPS, T. G. Detection of Triply Deuterated Ammonia in the Barbard 1 Cloud. *D. C. Lis, E. Roueff, M. Gerin, T. G. Phillips, L. H. Coudert, F. F. S. van der Tak, & P. Shilke*. 571, L55 (2002)
- PIACENTINI, F. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- PIAN, E. See ZHANG, Y. H., et al. Four Years of Monitoring Blazar PKS 2155–304 with *BeppoSAX*: Probing the Dynamics of the Jet.
- PIER, JEFF. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- PIER, JEFFREY R. See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- PIJPERS, FRANK J. See HJORTH, JENS, et al. The Time Delay of the Quadruple Quasar RX J0911.4+0551.
- PIOTTO, GIAMPAOLO. Rotation of Hot Horizontal Branch Stars in the Globular Clusters NGC 1904, NGC 2808, NGC 6093, and NGC 7078. *Alejandra Recio-Blanco, Giampaolo Piotto, Antonio Aparicio, & Alvio Renzini*. 572, L71 (2002)
- PIRAN, T. Gamma-Ray Burst Light Curves—Another Clue on the Inner Edge. *E. Nakar & T. Piran*. 572, L139 (2002)
- PIRO, ANTHONY L. Transient X-Ray Binaries in Elliptical Galaxies. *Anthony L. Piro & Lars Bildsten*. 571, L103 (2002)
- PIRO, L. See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- PIZZICHINI, G. See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- PLANET COLLABORATION, THE. See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- PLIONIS, M. Recent Dynamical Evolution of Galaxy Clusters. *M. Plionis*. 572, L67 (2002)
- PODSIADLOWSKI, PHILLIP. On the Population of Wind-Accreting Neutron Stars in the Galaxy. *Eric Pfah, Sual Rappaport, & Phillip Podsiadlowski*. 571, L37 (2002)
- POGGE, R. W. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- POGOSYAN, D. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- POLENTA, G. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis. *G. Polenta, P. A. R. Ade, J. J. Bock, J. R. Bond, J. Borrill, A. Boscaleri, C. R. Contaldi, B. P. Crill, P. de Bernardis, G. De Gasperis, G. De Troia, K. Ganga, M. Giacometti, E. Hivon, V. V. Hristov, A. H. Jaffe, A. E. Lange, S. Masi, P. D. Mauskopf, A. Melchiorri, T. Montroy, P. Natoli, C. B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, S. Prunet, G. Romeo, J. E. Ruhl, N. Vittorio, & A. Zeppilli*. 572, L27 (2002)
- POLLARD, K. R. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- POMPEIA, LUCIANA. Detailed Analysis of Nearby Bulgelike Dwarf Stars. II. Lithium Abundances. *Luciana Pompéia, Beatriz Barbuy, Michel Grenon, & Bruno Vaz Castilho*. 570, 820 (2002)
- POMPILIO, F. See LA FRANCA, F., et al. The *BeppoSAX* High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution.
- PONGETTI, F. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- POOLEY, DAVID. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S. *David Pooley, Walter H. G. Lewin, Derek W. Fox, Jon M. Miller, Christina K. Lacey, Schuyler D. Van Dyk, Kurt W. Weiler, Richard A. Sramek, Alexei V. Filippenko, Douglas C. Leonard, Stefan Immler, Roger A. Chevalier, Andrew C. Fabian, Claes Fransson, & Ken'ichi Nomoto*. 572, 932 (2002)
- POPE, ADRIAN. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- POPOWSKI, PIOTR. Correcting Parameters of Events Based on the Entropy of Microlensing Ensemble. *Piotr Popowski & Charles Alcock*. 572, 514 (2002)
- PORTEGIES ZWART, S. F. Mass Segregation in Globular Clusters. *J. M. Fregeau, K. J. Joshi, S. F. Portegies Zwart, & F. A. Rasio*. 570, 171 (2002)
- POSSENTI, A. Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian*. 570, L89 (2002)
- POSSENTI, ANDREA. The Case of PSR J1911–5958A in the Outskirts of NGC 6752: Signature of A Black Hole Binary in the Cluster Core? *Monica Colpi, Andrea Possenti, & Alessia Gualandris*. 570, L85 (2002)
- POUTANEN, J. See MCCONNELL, M. L., et al. The Soft Gamma-Ray Spectral Variability of Cygnus X-1.

- PRADA, FRANCISCO. See MCKAY, TIMOTHY A., et al. Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws.
- PRATO, L. The O I Line Emission in Active Galactic Nuclei Revisited. *A. Rodríguez-Ardila, S. M. Viegas, M. G. Pastoriza, L. Prato, & Carlos J. Donzelli.* 572, 94 (2002)
- PRAVDO, S. H. See MAEDA, Y., et al. A *Chandra* Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center?
- PRAVDO, STEVEN H. Magnetic Flaring in the Pre-Main-Sequence Sun and Implications for the Early Solar System. *Eric D. Feigelson, Gordon P. Garmire, & Steven H. Pravdo.* 572, 335 (2002)
- PREECE, R. D. Extended Power-Law Decays in BATSE Gamma-Ray Bursts: Signatures of External Shocks? *T. W. Giblin, V. Connaughton, J. van Paradijs, R. D. Preece, M. S. Briggs, C. Kouveliotou, R. A. M. J. Wijers, & G. J. Fishman.* 570, 572 (2002)
- PREMADI, PREMANA. Light Propagation in Inhomogeneous Universes. III. Distributions of Image Separations. *Hugo Martel, Premana Premadi, & Richard Matzner.* 570, 17 (2002)
- PRICE, P. A. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow. *P. A. Price, S. R. Kulkarni, E. Berger, S. G. Djorgovski, D. A. Frail, A. Mahabal, D. W. Fox, F. A. Harrison, J. S. Bloom, S. A. Yost, D. E. Reichart, A. A. Henden, G. R. Ricker, R. van der Spek, K. Hurley, J. L. Atteia, N. Kawai, E. Fenimore, & C. Graziani.* 571, L121 (2002)
- See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- GRB 01121: A Massive Star Progenitor. *P. A. Price, E. Berger, D. E. Reichart, S. R. Kulkarni, S. A. Yost, R. Subrahmanya, R. M. Wark, M. H. Wieringa, D. A. Frail, J. Bailey, B. Boyle, E. Corbett, K. Gunn, S. D. Ryder, N. Seymour, K. Koviak, P. McCarthy, M. Phillips, T. S. Axelrod, J. S. Bloom, S. G. Djorgovski, D. W. Fox, T. J. Galama, F. A. Harrison, K. Hurley, R. Sari, B. P. Schmidt, M. J. I. Brown, T. Cline, F. Frontera, C. Guidorzi, & E. Montanari.* 572, L51 (2002)
- PRICE, STEPHAN D. An Infrared Ring Nebula around MSXSC G358.5391+00.1305: The True Nature of Suspected Planetary Nebula Wray 17-96 Determined via Direct Imaging and Spectroscopy. *Michael P. Egan, J. Simon Clark, Donald R. Mizuno, Sean J. Carey, Iain A. Steele, & Stephan D. Price.* 572, 288 (2002)
- PRIEDHORSKY, WILLIAM C. On the X-Ray Source Luminosity Distributions in the Bulge and Disk of M31: First Results from the XMM-Newton Survey. *Sergey P. Trudolyubov, Konstantin N. Borozdin, William C. Priedhorsky, Keith O. Mason, & France A. Cordova.* 571, L17 (2002)
- PRIETO, M. A. Subarcsecond Emission in Seyfert Galaxies: The Nuclear Component in the L and M Bands. *M. A. Prieto, J. Reunanen, & J. K. Kotilainen.* 571, L7 (2002)
- PRIGOZHIN, G. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- PRIMAS, FRANCESCA. See COWAN, JOHN J., et al. The Chemical Composition and Age of the Metal-poor Halo Star BD +17°3248.
- PRIMINI, F. A. Bright X-Ray Sources in M31 Globular Clusters. *R. Di Stefano, A. K. H. Kong, M. R. Garcia, P. Barmby, J. Greiner, S. S. Murray, & F. A. Primini.* 570, 618 (2002)
- PROCHASKA, JASON X. The UCSD HIRES/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Hewitt, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Rubin, & Nao Suzuki.* 571, 693 (2002)
- PROFFITT, CHARLES R. Ultraviolet C I Lines in the HgMn Star  $\chi$  Lupi. *Charles R. Proffitt.* 571, 955 (2002)
- PROGA, DANIEL. Resonance Line Profile Calculations Based on Hydrodynamical Models of Cataclysmic Variable Winds. *Daniel Proga, Timothy R. Kallman, Janet E. Drew, & Louise E. Hartley.* 572, 382 (2002)
- PROTASSOV, ROSTISLAV. Statistics, Handle with Care: Detecting Multiple Model Components with the Likelihood Ratio Test. *Rostislav Protassov, David A. van Dyk, Alanna Connors, Vinay L. Kashyap, & Aneta Siemiginowska.* 571, 545 (2002)
- PRUNET, S. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background. See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- PSALTIS, DIMITRIOS. A Unified Description of the Timing Features of Accreting X-Ray Binaries. *Tomaso Belloni, Dimitrios Psaltis, & Michiel van der Klis.* 572, 392 (2002)
- PUDRITZ, RALPH E. Three-dimensional Simulations of the Gravitational Collapse of Logotropic Molecular Cloud Cores. *Michael A. Reid, Ralph E. Pudritz, & James Wadsley.* 570, 231 (2002)
- PUGA, E. See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- PUN, CHUN S. J. Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A. *Chun S. J. Pun, Eli Michael, Svetozar A. Zhekov, Richard McCray, Peter M. Garavich, Peter M. Challis, Robert P. Kirshner, E. Baron, David Branch, Roger A. Chevalier, Alexei V. Filippenko, Claes Fransson, Bruno Leibundgut, Peter Lundqvist, Nino Panagia, M. M. Phillips, Brian Schmidt, George Sonneborn, Nicholas B. Suntzeff, Lifan Wang, & J. Craig Wheeler.* 572, 906 (2002)
- PUTMAN, MARY E. A Limit on the Metallicity of Compact High-Velocity Clouds. *Kenneth R. Sembach, Brad K. Gibson, Yeshe Fenner, & Mary E. Putman.* 572, 178 (2002)
- PYO, TAE-SOO. Velocity-resolved [Fe II] Line Spectroscopy of L1551 IRS 5: A Partially Ionized Wind under Collimation around an Ionized Fast Jet. *Tae-Soo Pyo, Masahiko Hayashi, Naoto Kobayashi, Hiroshi Terada, Miwa Goto, Takuya Yamashita, Alan T. Tokunaga, & Yoichi Itoh.* 570, 724 (2002)
- QIAO, G. J. Counterclockwise Magnetic Fields in the Norma Spiral Arm. *J. L. Han, R. N. Manchester, A. G. Lyne, & G. J. Qiao.* 570, L17 (2002)
- QIU, JIONG. Electron Transport during the 1999 August 20 Flare Inferred from Microwave and Hard X-Ray Observations. *Jeongwoo Lee, Dale E. Gary, Jiong Qiu, & Peter T. Gallagher.* 572, 609 (2002)
- QIU, Y. L. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- QUINN, J. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- RADOVICH, M. The Interpretation of the Emission Spectra of the Seyfert 2 Galaxy NGC 7130: Determination of the Active Galactic Nucleus and Starburst Contributions. *M. Contini, M. Radovich, P. Rafanelli, & G. M. Richter.* 572, 124 (2002)
- RAFANELLI, P. The Interpretation of the Emission Spectra of the Seyfert 2 Galaxy NGC 7130: Determination of the Active Galactic Nucleus and Starburst Contributions. *M. Contini, M. Radovich, P. Rafanelli, & G. M. Richter.* 572, 124 (2002)
- RAFIKOV, R. R. Planet Migration and Gap Formation by Tidally Induced Shocks. *R. R. Rafikov.* 572, 566 (2002)
- RAMIREZ-RUIZ, ENRICO. Soft X-Ray Emission Lines in the Early Afterglow of Gamma-Ray Bursts. *Davide Lazzati, Enrico Ramirez-Ruiz, & Martin J. Rees.* 572, L57 (2002)
- RAMIREZ-RUIZ, E. On the Progenitor of the Type Ic Supernova 2002ap. *S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen.* 572, L147 (2002)
- RANSOM, R. R. Possible Corotation of the Milliarcsecond Radio Structure of the Close Binary HR 1099. *R. R. Ransom, N. Bartel, M. F. Bietenholz, D. E. Lebach, M. I. Ratner, I. I. Shapiro, & J.-F. Lestrade.* 572, 487 (2002)
- RANSOM, S. M. See CAMILO, F., et al. Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope.
- RANSOM, SCOTT M. A Deep Search for Pulsations from the Nearby Isolated Neutron Star RX J1856.5-3754. *Scott M. Ransom, Bryan M. Gaensler, & Patrick O. Slane.* 570, L75 (2002)
- RAO, SANDHYA M. The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao.* 572, L7 (2002)
- RAPPAPOORT, SUAL. On the Population of Wind-Accreting Neutron Stars in the Galaxy. *Eric Pfah, Sual Rappaport, & Phillip Podsiadlowski.* 571, L37 (2002)
- RASIO, F. A. Mass Segregation in Globular Clusters. *J. M. Fregeau, K. J. Joshi, S. F. Portegies Zwart, & F. A. Rasio.* 570, 171 (2002)
- RATNER, M. I. Possible Corotation of the Milliarcsecond Radio Structure of the Close Binary HR 1099. *R. R. Ransom, N. Bartel, M. F. Bietenholz, D. E. Lebach, M. I. Ratner, I. I. Shapiro, & J.-F. Lestrade.* 572, 487 (2002)
- RAY, PAUL S. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65.
- RAYMOND, JOHN C. The Optical Spectrum of the SN 1006 Supernova Remnant Revisited. *Parviz Ghavamian, P. Frank Winkler, John C. Raymond, & Knox S. Long.* 572, 888 (2002)



- RAZUMOV, ALEXEI O. Cosmological Hydrogen Reionization with Three-dimensional Radiative Transfer. *Alexei O. Razoumov, Michael L. Norman, Tom Abel, & Douglas Scott*. 572, 695 (2002)
- REACH, WILLIAM T. The Origin of Far-Infrared [C II] Emission in the Large Magellanic Cloud. *Sungeun Kim & William T. Reach*. 571, 288 (2002)
- REAMES, D. V. Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopalswamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Rosenvinge*. 572, L103 (2002)
- REAMES, DONALD V. Magnetic Topology of Impulsive and Gradual Solar Energetic Particle Events. *Donald V. Reames*. 571, L63 (2002)
- REAY, N. W. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- RECIO-BLANCO, ALEJANDRA. Rotation of Hot Horizontal Branch Stars in the Globular Clusters NGC 1904, NGC 2808, NGC 6093, and NGC 7078. *Alejandra Recio-Blanco, Giampaolo Piotto, Antonio Aparicio, & Alvio Renzini*. 572, L71 (2002)
- REES, MARTIN J. Soft X-Ray Emission Lines in the Early Afterglow of Gamma-Ray Bursts. *Davide Lazzati, Enrico Ramirez-Ruiz, & Martin J. Rees*. 572, L57 (2002)
- REEVES, KATHERINE K. Correlating Transition Region Explosive Events With Extreme-Ultraviolet Brightenings. *Amy R. Winebarger, Adria C. Updike, & Katherine K. Reeves*. 570, L105 (2002)
- REFREGIER, ALEXANDRE. Shape Reconstruction and Weak Lensing Measurement with Interferometers: A Shapelet Approach. *Tzu-Ching Chang & Alexandre Refregier*. 570, 447 (2002)
- Cosmic Shear and Power Spectrum Normalization with the Hubble Space Telescope. *Alexandre Refregier, Jason Rhodes, & Edward J. Groth*. 572, L131 (2002)
- REGO, M. The [O II]  $\lambda$ 3727 Luminosity Function of the Local Universe. *J. Gallego, C. E. García-Dabó, J. Zamorano, A. Argón-Salamanca, & M. Rego*. 570, L1 (2002)
- REICHAERT, D. E. See PRICE, P. A., et al. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow.
- See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 011121.
- See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- REID, M. J. How Mira Variables Change Visual Light by a Thousandfold: Erratum (ApJ, 568, 931 [2002]). *M. J. Reid & J. E. Goldston*. 572, 694 (2002) (Orig. paper in 568, 931 (2002))
- REID, MICHAEL A. Three-dimensional Simulations of the Gravitational Collapse of Logatropic Molecular Cloud Cores. *Michael A. Reid, Ralph E. Pudritz, & James Wadsley*. 570, 231 (2002)
- REILLY, KAICE T. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65.
- REZNINI, ALVIO. Rotation of Hot Horizontal Branch Stars in the Globular Clusters NGC 1904, NGC 2808, NGC 6093, and NGC 7078. *Alejandra Recio-Blanco, Giampaolo Piotto, Antonio Aparicio, & Alvio Renzini*. 572, L71 (2002)
- RESSLER, M. See LISSE, C., et al. Discovery of an Extremely Red Object in the Field of HD 155826.
- REULAND, MICHEL. A Galactic Wind at  $z = 5.190$ . *Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Dey, Wil van Breugel, Win de Vries, & Michiel Reuland*. 570, 92 (2002)
- REUNANEN, J. Subarcsecond Emission in Seyfert Galaxies: The Nuclear Component in the L and M Bands. *M. A. Prieto, J. Reunanen, & J. K. Kotilainen*. 571, L7 (2002)
- REYNOLDS, C. S. See MILLER, J. M., et al. Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the XMM-Newton/EPIC-pn Spectrum of XTE J1650-500.
- REYNOLDS, P. T. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- REYNOLDS, R. J. Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Otte, J. S. Gallagher III, & R. J. Reynolds*. 572, 823 (2002)
- WHAM Observations of H $\alpha$  From High-Velocity Clouds: Are they Galactic or Extragalactic? *S. L. Tufte, J. D. Wilson, G. J. Madsen, L. M. Haffner, & R. J. Reynolds*. 572, L153 (2002)
- RHODES, JASON. Cosmic Shear and Power Spectrum Normalization with the Hubble Space Telescope. *Alexandre Refregier, Jason Rhodes, & Edward J. Groth*. 572, L131 (2002)
- RICHARD, O. Models of Metal-poor Stars with Gravitational Settling and Radiative Accelerations. II. The Age of the Oldest Stars. *Don A. Vandenberg, O. Richard, G. Michaud, & J. Richer*. 571, 487 (2002)
- RICHARDS, ERIC. Understanding the Nature of the Optically Faint Radio Sources and Their Connection to the Submillimeter Population. *Scott C. Chapman, Geraint F. Lewis, Douglas Scott, Colin Borys, & Eric Richards*. 570, 557 (2002)
- RICHER, J. Models of Metal-poor Stars with Gravitational Settling and Radiative Accelerations. II. The Age of the Oldest Stars. *Don A. Vandenberg, O. Richard, G. Michaud, & J. Richer*. 571, 487 (2002)
- RICHMOND, MICHAEL. See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- RICHTER, G. M. The Interpretation of the Emission Spectra of the Seyfert 2 Galaxy NGC 7130: Determination of the Active Galactic Nucleus and Starburst Contributions. *M. Contini, M. Radovich, P. Rafanelli, & G. M. Richter*. 572, 124 (2002)
- RICHTER, MATTHEW J. Looking for Pure Rotational H $_2$  Emission from Protoplanetary Disks. *Matthew J. Richter, Daniel T. Jaffe, Geoffrey A. Blake, & John H. Lacy*. 572, L161 (2002)
- RICKER, G. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite. *G. Ricker, K. Hurley, D. Lamb, S. Woosley, J. L. Atteia, N. Kawai, R. van der Spek, G. Crew, J. Doty, J. Villaseñor, G. Prigozhin, G. Monnelly, N. Butler, M. Matsuoka, Y. Shirasaki, T. Tamagawa, K. Torii, T. Sakamoto, A. Yoshida, E. Fenimore, M. Galassi, T. Tavenner, T. Donaghy, C. Graziani, M. Boer, J. P. Decalay, M. Niel, J. F. Olive, G. Vedrenne, T. Cline, J. G. Jernigan, A. Levine, F. Martel, E. Morgan, J. Bruga, R. Manchanda, G. Pizzichini, K. Takagishi, & M. Yamauchi*. 571, L127 (2002)
- RICKER, G. R. See MAEDA, Y., et al. A Chandra Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center?
- See PRICE, P. A., et al. GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow.
- RIESS, ADAM. Will Jets Identify the Progenitors of Type Ia Supernovae? *Mario Livio, Adam Riess, & William Sparks*. 571, L99 (2002)
- RILETT, DARRELL. Magnetohydrodynamic Shock Conditions for Accreting Plasma onto Kerr Black Holes. I. Masaaki Takahashi, Darrell Rilett, Keigo Fukumura, & Sachiko Tsuruta. 572, 950 (2002)
- RISALITI, G. Ubiquitous Variability of X-Ray-absorbing Column Densities in Seyfert 2 Galaxies. *G. Risaliti, M. Elvis, & F. Nicastro*. 571, 234 (2002)
- RIX, H.-W. See LEHAR, J., et al. Hubble Space Telescope Observations of 10 Two-Image Gravitational Lenses: Erratum (ApJ, 536, 584 [2002]).
- RIX, HANS-WALTER. See MCKAY, TIMOTHY A., et al. Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws.
- ROBERTS, MALLORY S. E. Spectral Components of the Radio Composite Supernova Remnant G11.2-0.3. *Cindy Tam, Mallory S. E. Roberts, & Victoria M. Kuspis*. 572, 202 (2002)
- ROCKOSI, CONSTANCE. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- ROCKOSI, CONSTANCE M. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- RODRÍGUEZ, J. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- RODRÍGUEZ, L. F. The Nature of the Cluster of Radio Sources in GGD 14. *Y. Gómez, L. F. Rodríguez, & G. Garay*. 571, 901 (2002)
- RODRÍGUEZ, LUIS F. The Formation of Massive Stars. I. High-Resolution Millimeter and Radio Studies of High-Mass Protostellar Candidates. *Sergio Molinari, Leonardo Testi, Luis F. Rodríguez, & Qizhou Zhong*. 570, 758 (2002)
- RODRÍGUEZ-ARDILA, A. The O I Line Emission in Active Galactic Nuclei Revisited. *A. Rodríguez-Ardila, S. M. Viegas, M. G. Pastoriza, L. Prato, & Carlos J. Donzelli*. 572, 94 (2002)
- ROMANOVA, M. M. Poynting Jets from Accretion Disks. *R. V. E. Lovelace, H. Li, A. V. Koldoba, G. V. Ustyugova, & M. M. Romanova*. 572, 445 (2002)
- ROMEO, G. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.



- ROOD, ROBERT T. ISOCAM Observations of Galactic Globular Clusters: Mass Loss along the Red Giant Branch. *Livia Origlia, Francesco R. Ferraro, Flavio Fusi Pecci, & Robert T. Rood.* 571, 458 (2002)
- ROSATI, PIERO. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- ROSE, H. J. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- ROSENBERG, L. J. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- ROUEFF, E. Detection of Triply Deuterated Ammonia in the Barbard I Cloud. *D. C. Lis, E. Roueff, M. Gerin, T. G. Phillips, L. H. Coudert, F. F. S. van der Tak, & P. Shilke.* 571, L55 (2002)
- RUBINSTEIN, ROBERT. Turbulent Time Correlations and Generation of Acoustic Waves by Stellar or Solar Turbulent Convection. *Robert Rubinstein & Ye Zhou.* 572, 674 (2002)
- RUDAK, BRONISLAW. Study of Gamma-Ray Burst Binary Progenitors. *Krzysztof Belczynski, Tomasz Bulik, & Bronislaw Rudak.* 571, 394 (2002)
- RUHL, J. E. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background. See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- RUIZ, J. See GEORGE, I. M., et al. The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516.
- RÜJULA, A. DE. Is There a 1998bw-like Supernova in the Afterglow of Gamma-Ray Burst 01121? *Shlomo Dado, Arnon Dar, & A. De Rújula.* 572, L143 (2002)
- RUPKE, DAVID S. Keck Absorption-Line Spectroscopy of Galactic Winds in Ultraluminous Infrared Galaxies. *David S. Rupke, Sylvain Veilleux, & D. B. Sanders.* 570, 588 (2002)
- RUSIN, DAVID. The Expected Properties of Dark Lenses. *David Rusin.* 572, 705 (2002)
- RYAN, J. M. See MCCONNELL, M. L., et al. The Soft Gamma-Ray Spectral Variability of Cygnus X-1.
- RYAN, SEAN G. Rapid Rotation of Ultra-Li-depleted Halo Stars and Their Associations with Blue Stragglers. *Sean G. Ryan, Scott G. Gregory, Ulrich Kolb, Timothy C. Beers, & Toshitaka Kajino.* 571, 501 (2002)
- RYDEN, BARBARA S. The Shapes of Galaxies in the Sloan Digital Sky Survey. *S. M. Khairul Alam & Barbara S. Ryden.* 570, 610 (2002)
- RYDER, S. D. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- SABBEY, C. N. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- SACKETT, P. D. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5. See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- SAHU, K. C. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5. See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- SAKAKI, N. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- SAKAMOTO, T. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- SAKURAI, N. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- SALAS, LUIS. Flux-Velocity Relation for  $H_2$  Outflows. *Luis Salas & Irene Cruz-González.* 572, 227 (2002)
- SALIM, SAMIR. Searching for Failed Supernovae with Astrometric Binaries. *Andrew Gould & Samir Salim.* 572, 944 (2002)
- SAMBRUNA, RITA M. A Survey of Extended Radio Jets in Active Galactic Nuclei with Chandra and the Hubble Space Telescope: First Results. *Rita M. Sambruna, L. Maraschi, F. Tavecchio, C. Megan Urry, C. C. Cheung, G. Chartas, R. Scarpa, & Jessica K. Gambill.* 571, 206 (2002)
- SÁNCHEZ-CUBERES, M. Infrared Photometry of Solar Photospheric Structures. II. Center-to-Limb Variation of Active Regions. *M. Sánchez Cuberes, M. Vázquez, J. A. Bonet, & M. Sobotka.* 570, 886 (2002)
- SANCHEZ-FERNANDEZ, C. See MILLER, J. M., et al. Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the XMM-Newton/EPIC-pn Spectrum of XTE J1650-500. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- SANDERS, D. B. Keck Absorption-Line Spectroscopy of Galactic Winds in Ultraluminous Infrared Galaxies. *David S. Rupke, Sylvain Veilleux, & D. B. Sanders.* 570, 588 (2002)
- SANDQUIST, ERIC L. A Critical Examination of Li Pollution and Giant-Planet Consumption by a Host Star. *Eric L. Sandquist, Jon J. Dokter, D. N. C. Lin, & Rosemary A. Mardling.* 572, 1012 (2002)
- SANO, TAKAYOSHI. The Effect of the Hall Term on the Nonlinear Evolution of the Magnetorotational Instability. I. Local Axisymmetric Simulations. *Takayoshi Sano & James M. Stone.* 570, 314 (2002)
- SANZ-FORCADA, J. Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 570, 799 (2002)
- SARAJEDINI, VICKI L. See IM, MYUNGSHIN, et al. The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ .
- SARAZIN, CRAIG L. Untangling the X-Ray Emission from the Sa Galaxy NGC 1291 with Chandra. *Jimmy A. Irwin, Craig L. Sarazin, & Joel N. Bregman.* 570, 152 (2002)
- X-Ray Binaries and Globular Clusters in Elliptical Galaxies. *Raymond E. White III, Craig L. Sarazin, & Shrinivas R. Kulkarni.* 571, L23 (2002)
- SARI, R. See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 01121.
- See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- SARKISSIAN, J. Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian.* 570, L89 (2002)
- SARMA, A. P. Gaussian Spectral Line Profiles of Astrophysical Masers. *W. D. Watson, A. P. Sarma, & M. S. Singleton.* 570, L37 (2002)
- SASAKI, M. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- SASANO, M. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- SASLAW, WILLIAM C. Statistical Mechanics of the Cosmological Many-Body Problem. *Farooq Ahmad, William C. Saslaw, & Naseer Iqbal Bhat.* 571, 576 (2002)
- SAULT, ROBERT J. The Spectrum and Variability of Circular Polarization in Sagittarius A from 1.4 to 15 GHz. *Geoffrey C. Bower, Heino Falcke, Robert J. Sault, & Donald C. Backer.* 571, 843 (2002)
- SAUMON, DIDIER. Evidence of Cloud Disruption in the L/T Dwarf Transition. *Adam J. Burgasser, Mark S. Marley, Andrew S. Ackerman, Didier Saumon, Katharina Lodders, Conrad C. Dahn, Hugh C. Harris, & J. Davy Kirkpatrick.* 571, L151 (2002)
- SAUVAGE, MARC. Mid-Infrared Observation of Mass Loss in Elliptical Galaxies. *Alex Athey, Joel Bregman, Jesse Bregman, Pasquale Temi, & Marc Sauvage.* 571, 272 (2002)
- SAVAGE, BLAIR D. Far-Ultraviolet Spectroscopic Explorer Observations of Degree-Scale Variations in Galactic Halo O VI. *J. Christopher Howk, Blair D. Savage, Kenneth R. Sembach, & Charles G. Hoopes.* 572, 264 (2002)
- SAVAGE, C. Heavy-Metal Chemistry in Proto-Planetary Nebulae: Detection of MgNC, NaCN, and AlF toward CRL 2688: Erratum (ApJ, 562, 790 [2001]). *J. L. Highberger, C. Savage, J. H. Beiging, & L. M. Ziurys.* 571, 1022 (2002) (Orig. paper in 562, 790 (2001))
- SAZ PARKINSON, PABLO M. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object 1ES 1959+65.
- SCANNAPIECO, EVAN. An Analytical Approach to Inhomogeneous Structure Formation. *Evan Scannapieco & Rennan Barkana.* 571, 585 (2002)
- SCARAMUZZI, F. See NETTERFIELD, C. B., et al. A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background.
- SCARGLE, JEFFREY D. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object 1ES 1959+65.
- SCARPA, R. A Survey of Extended Radio Jets in Active Galactic Nuclei with Chandra and the Hubble Space Telescope: First Results. *Rita M. Sambruna, L. Maraschi, F. Tavecchio, C. Megan Urry, C. C. Cheung, G. Chartas, R. Scarpa, & Jessica K. Gambill.* 571, 206 (2002)
- SCHADE, DAVID. The Gravitational Lens CFRS 03.1077. *David Crampton, David Schade, F. Hammer, A. Matzkin, J. J. Lilly, & O. Le Fèvre.* 570, 86 (2002)
- SCHARF, CALEB. Optimal Chandra and XMM-Newton Bandpasses for Detecting Low-Temperature Groups and Clusters of Galaxies. *Caleb Scharf.* 572, 157 (2002)

- SCHecter, PAUL L. See HJORTH, JENS, et al. The Time Delay of the Quadruple Quasar RX J0911.4+0551.
- SCHIEDER, DONALD P. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- SCHIELIN, H. See HORVÁTH, Á., et al. Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction.
- SCHERRER, P. H. Large-Scale Solar Coronal Structures in Soft X-Rays and Their Relationship to the Magnetic Flux. *E. E. Benevolenskaya, A. G. Kosovichev, J. R. Lemen, P. H. Scherrer, & G. L. Slater*. 571, L181 (2002)
- SCHERRER, ROBERT J. Prospects for Determining the Equation of State of the Dark Energy: What Can Be Learned from Multiple Observables? *Jens Kujat, Anjela M. Linn, Robert J. Scherrer, & David H. Weinberg*. 572, 1 (2002)
- SCHLEGEL, DAVID. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- SCHMIDT, B. P. See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 01121.
- SCHMIDT, BRIAN. See PUN, CHUN S. J., et al. Modeling the *Hubble Space Telescope* Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- SCHMITZ, H. The Influence of Electron Temperature and Magnetic Field Strength on Cosmic-Ray Injection in High Mach Number Shocks. *H. Schmitz, S. C. Chapman, & R. O. Dendy*. 570, 637 (2002)
- SCHMUTZ, WERNER. XMM-Newton Detection of Hard X-Ray Emission in the Nitrogen-Type Wolf-Rayet Star WR 110. *Stephen L. Skinner, Svetozar A. Zhekov, Manuel Güdel, & Werner Schmutz*. 572, 477 (2002)
- SCHNEIDER, D. P. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- SCHNEIDER, R. First Stars, Very Massive Black Holes, and Metals. *R. Schneider, A. Ferrara, P. Natarajan, & K. Omukai*. 571, 30 (2002)
- SCHÖNFELDER, V. See MCCONNELL, M. L., et al. The Soft Gamma-Ray Spectral Variability of Cygnus X-1.
- SCHÖNFELDER, V. The Cosmic-Ray Luminosity of the Galaxy. *V. A. Dogiel, V. Schönfelder, & A. W. Strong*. 572, L157 (2002)
- SCHREIER, ETHAN. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- SCHUBERT, GERALD. From Penetrative Convection to Teleconvection. *Keke Zhang & Gerald Schubert*. 572, 461 (2002)
- SCHUETZ, OLIVER. Recurring Outbursts and Nuclear Fragmentation of Comet C/2001 A2 (LINEAR). *Zdenek Sekanina, Emmanuel Jehin, Hermann Boehnhardt, Xavier Bonfils, Oliver Schuetz, & Daniel Thomas*. 572, 679 (2002)
- SCHULTZ, A. See LISSE, C., et al. Discovery of an Extremely Red Object in the Field of HD 155826.
- SCHULTZ, A. B. Candidate Pre-Main-Sequence F Stars with Circumstellar Dust Identified Using Combined 2MASS and *inby* Data. *A. A. Suchkov, A. B. Schultz, & C. M. Lisse*. 570, L29 (2002)
- SCHULTZ, N. S. Variability of the X-Ray P Cygni Line Profiles from Circinus X-1 Near Zero Phase. *N. S. Schultz & W. N. Brandt*. 572, 971 (2002)
- SCHWARTZ, D. A. A *Chandra* Search for X-Ray Jets in  $z \sim 6$  Quasars. *D. A. Schwartz*. 571, L71 (2002)
- SCHMIDT, B. P. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- SCOCIMARRO, ROMAN. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- SCOTT, DOUGLAS. Understanding the Nature of the Optically Faint Radio Sources and Their Connection to the Submillimeter Population. *Scott C. Chapman, Geraint F. Lewis, Douglas Scott, Colin Borys, & Eric Richards*. 570, 557 (2002)
- Cosmological Hydrogen Reionization with Three-dimensional Radiative Transfer. *Alexei O. Razoumov, Michael L. Norman, Tom Abel, & Douglas Scott*. 572, 695 (2002)
- SCOTT, JENNIFER. A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . IV. The Clustering and Evolution of Clouds at  $z \leq 1.7$ . *Adam Dobrzycki, Jill Bechtold, Jennifer Scott, & Miwa Morita*. 571, 654 (2002)
- A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . V. The Extragalactic Ionizing Background at Low Redshift. *Jennifer Scott, Jill Bechtold, Miwa Morita, Adam Dobrzycki, & Varsha P. Kulkarni*. 571, 665 (2002)
- SCOVILLE, NICK Z. Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogee, Johan H. Knapen, Seppo Laine, Issac Shlosman, Nick Z. Scoville, & Peter Englmaier*. 570, L55 (2002)
- SCRANTON, RYAN. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- SEAGER, SARA. Atmospheric Lensing and Oblateness Effects during an Extrasolar Planetary Transit. *Lam Hui & Sara Seager*. 572, 540 (2002)
- SEKANINA, ZDENEK. Recurring Outbursts and Nuclear Fragmentation of Comet C/2001 A2 (LINEAR). *Zdenek Sekanina, Emmanuel Jehin, Hermann Boehnhardt, Xavier Bonfils, Oliver Schuetz, & Daniel Thomas*. 572, 679 (2002)
- SEMBACH, KENNETH R. A Limit on the Metallicity of Compact High-Velocity Clouds. *Kenneth R. Sembach, Brad K. Gibson, Yeshe Fenner, & Mary E. Putman*. 572, 178 (2002)
- Far-Ultraviolet Spectroscopic Explorer Observations of Degree-Scale Variations in Galactic Halo O VI. *J. Christopher Howk, Blair D. Savage, Kenneth R. Sembach, & Charles G. Hoopes*. 572, 264 (2002)
- SEMBROSKI, G. H. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- SERES, Z. See HORVÁTH, Á., et al. Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction.
- SERRA-RICART, M. See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- SEVERGNINI, P. See COMASTRI, A., et al. The HELLAS2 XMM Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy.
- SEYMOUR, N. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- SHABAD, GANYA. See GIEBELS, BERRIE, et al. Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65.
- SHAHBAZ, TARIQ. Infrared Photometric Variability of GX 13+1 and GX 17+2. *Reba M. Bandyopadhyay, Philip A. Charles, Tariq Shahbaz, & R. Mark Wagner*. 570, 793 (2002)
- SHANKS, T. Discovery of Radio-loud Broad Absorption Line Quasars Using Ultraviolet Excess and Deep Radio Selection: Erratum (ApJ, 505, L17 [1998]). *M. S. Brotherton, W. van Breugel, R. J. Smith, B. J. Boyle, T. Shanks, S. M. Croom, L. Miller, & R. H. Becker*. 571, L191 (2002)
- SHAPIRO, I. I. Possible Corotation of the Milliarsecond Radio Structure of the Close Binary HR 1099. *R. R. Ransom, N. Bartel, M. F. Bietenholz, D. E. Lebach, M. I. Rainer, I. I. Shapiro, & J.-F. Lestrade*. 572, 487 (2002)
- SHAPIRO, PAUL R. On the Direct Detectability of the Cosmic Dark Ages: 21 Centimeter Emission from Minihalos. *Ilian T. Iliev, Paul R. Shapiro, Andrea Ferrara, & Hugo Martel*. 572, L123 (2002)
- SHAPIRO, STUART L. Collapse of a Rotating Supermassive Star to a Supermassive Black Hole: Fully Relativistic Simulations. *Masaru Shibata & Stuart L. Shapiro*. 572, L39 (2002)
- SHAPLEY, A. Westphal-MMD 11: An Interacting Luminous Lyman Break Galaxy. *S. C. Chapman, A. Shapley, C. Steidel, & R. Windhorst*. 572, L1 (2002)
- SHAPLEY, ALICE E. The Kinematic Connection between Absorbing Gas toward QSOs and Galaxies at Intermediate Redshift. *Charles C. Steidel, Juna A. Kollmeier, Alice E. Shapley, Christopher W. Churchill, Mark Dickinson, & Max Pettini*. 570, 526 (2002)
- SHAPOSHNIKOV, NICKOLAI. Three Type I X-Ray Bursts from Cygnus X-2: Application of Analytical Models for Neutron Star Mass and Radius Determination. *Lev Titarchuk & Nickolai Shaposhnikov*. 570, L25 (2002)
- SHARA, MICHAEL M. The Promiscuous Nature of Stars in Clusters. *Jarrod R. Hurley & Michael M. Shara*. 570, 184 (2002)
- Star Clusters as Type Ia Supernova Factories. *Michael M. Shara & Jarrod R. Hurley*. 571, 830 (2002)

- SHATASHVILI, NANA L. Energy Transformation Mechanism in the Solar Atmosphere Associated with Magnetofluid Coupling: Explosive and Eruptive Events. *Shuichi Ohsaki, Nana L. Shatashvili, Zensho Yoshida, & Swadesh M. Mahajan*. 570, 395 (2002)
- SHEFFER, YARON. High-Resolution Measurements of Intersystem Bands of Carbon Monoxide toward X Persei. *Yaron Sheffer, S. R. Federman, & David L. Lambert*. 572, L95 (2002)
- SHELDON, ERIN SCOTT. See MCKAY, TIMOTHY A., et al. Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws.
- SHETH, RAVI K. See ZHAO, YITONG, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODGE, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- SHIBATA, K. The Large-Scale Coronal Field Structure and Source Region Features for a Halo Coronal Mass Ejection. *Tongjiang Wang, Yihua Yan, Jialong Wang, H. Kurokawa, & K. Shibata*. 572, 580 (2002)
- Evidence of EIT and Moreton Waves in Numerical Simulations. *P. F. Chen, S. T. Wu, K. Shibata, & C. Feng*. 572, L99 (2002)
- Simultaneous Observations of a Moreton Wave on 1997 November 3 in H $\alpha$  and Soft X-Rays. *N. Narukage, H. S. Hudson, T. Morimoto, S. Akiyama, R. Kitai, H. Kurokawa, & K. Shibata*. 572, L109 (2002)
- A Simple Model for a Magnetic Reconnection-heated Corona. *B. F. Liu, S. Mineshige, & K. Shibata*. 572, L173 (2002)
- SHIBATA, MASARU. Collapse of a Rotating Supermassive Star to a Supermassive Black Hole: Fully Relativistic Simulations. *Masaru Shibata & Stuart L. Shapiro*. 572, L39 (2002)
- SHIGEMATSU, TOSHIKAZU. History of Milky Way Dwarf Spheroidal Galaxies Imprinted on Abundance Patterns of Neutron-Capture Elements. *Takuji Tsujimoto & Toshiyuki Shigeyama*. 571, L93 (2002)
- SHILKE, P. Detection of Triply Deuterated Ammonia in the Barabard 1 Cloud. *D. C. Lis, E. Roueff, M. Gerin, T. G. Phillips, L. H. Coudert, F. F. S. van der Tak, & P. Shilke*. 571, L55 (2002)
- SHIMADA, N. Nonthermal Electrons at High Mach Number Shocks: Electron Shock Suffering Acceleration. *M. Hoshino & N. Shimada*. 572, 880 (2002)
- SHINOZAKI, K. Upper Limit on Gamma-Ray Flux above 10<sup>19</sup> eV Estimated by the Akeno Giant Air Shower Array Experiment. *K. Shinozaki, M. Chikawa, M. Fukushima, N. Hayashida, N. Inoue, K. Honda, K. Kadota, F. Kakimoto, K. Kamata, S. Kawaguchi, S. Kawakami, Y. Kawasaki, N. Kawasumi, A. M. Mahrous, K. Mase, S. Mizobuchi, Y. Morizane, N. Nagano, H. Ohoka, S. Osone, N. Sakaki, N. Sakurai, M. Sasaki, M. Sasano, M. Takeda, M. Teshima, I. Tsushima, R. Torii, Y. Uchihori, R. A. Vázquez, T. Yamamoto, S. Yoshida, & H. Yoshii*. 571, L117 (2002)
- SHIRASAKI, Y. See RICKER, G., et al. GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite.
- SHLOSMAN, ISSAC. Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogee, Johan H. Knapen, Seppo Laine, Issac Shlosman, Nick Z. Scoville, & Peter Englmaier*. 570, L55 (2002)
- SHU, FRANK. Activity in Very Cool Stars: Magnetic Dissipation in Late M and L Dwarf Atmospheres. *Subhanjoy Mohanty, Gibor Basri, Frank Shu, France Allard, & Gilles Chabrier*. 571, 469 (2002)
- SIDWELL, R. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- SIEGMUND, WALTER. See ZHAO, YITONG, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- SIEMIGINOWSKA, ANETA. Chandra Discovery of a 300 Kiloparsec X-Ray Jet in the Gigahertz-peaked Spectrum Quasar PKS 1127-145. *Aneta Siemiginowska, Jill Bechtold, Thomas L. Aldcroft, Martin Elvis, D. E. Harris, & Adam Dobrzycki*. 570, 543 (2002)
- Statistics. Handle with Care: Detecting Multiple Model Components with the Likelihood Ratio Test. *Rostislav Protosov, David A. van Dyk, Alanna Connors, Vinay L. Kashyap, & Aneta Siemiginowska*. 571, 545 (2002)
- See GREEN, PAUL J., et al. Chandra Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens?
- SISS, LIONEL. Structure, Evolution, and Nucleosynthesis of Primordial Stars. *Lionel Siess, Mario Livio, & John Lanzetta*. 570, 329 (2002)
- SIGURDSSON, STEINN. Intracluster Red Giant Stars in the Virgo Cluster. *Patrick R. Durrell, Robin Ciardullo, John J. Feldmeier, George H. Jacoby, & Steinn Sigurdsson*. 570, 119 (2002)
- Are There Unstable Planetary Systems around White Dwarfs? *John H. Debes & Steinn Sigurdsson*. 572, 556 (2002)
- Nova Scorpii and Coalescing Low-Mass Black Hole Binaries as LIGO Sources. *Michael S. Siipior & Steinn Sigurdsson*. 572, 962 (2002)
- SIKIVIE, P. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- SILVERMAN, JOHN. See GREEN, PAUL J., et al. Chandra Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens?
- SIMARD, LUC. See IM, MYUNGSHIN, et al. The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ .
- SINGLETON, M. S. Gaussian Spectral Line Profiles of Astrophysical Masers. *W. D. Watson, A. P. Sarma, & M. S. Singleton*. 570, L37 (2002)
- SION, E. M. A Determination of the Local Density of White Dwarf Stars. *J. B. Holberg, Terry D. Oswalt, & E. M. Sion*. 571, 512 (2002)
- SION, EDWARD M. The Extraordinary Cataclysmic Binary RU Pegasi: The Hottest White Dwarf in a Dwarf Nova? *Edward M. Sion & Joel Urban*. 572, 456 (2002)
- SIPIOR, MICHAEL S. Nova Scorpii and Coalescing Low-Mass Black Hole Binaries as LIGO Sources. *Michael S. Siipior & Steinn Sigurdsson*. 572, 962 (2002)
- SKINNER, STEPHEN L. XMM-Newton Detection of Hard X-Ray Emission in the Nitrogen-Type Wolf-Rayet Star WR 110. *Stephen L. Skinner, Svetozar A. Zhekov, Manuel Güdel, & Werner Schmutz*. 572, 477 (2002)
- SKUMANICH, A. The Physical Content of the Leading Orders of Principal Component Analysis of Spectral Profiles. *A. Skumanich & A. López Ariste*. 570, 379 (2002)
- SLANE, PATRICK O. A Deep Search for Pulsations from the Nearby Isolated Neutron Star RX J1856.5-3754. *Scott M. Ransom, Bryan M. Gaensler, & Patrick O. Slane*. 570, L75 (2002)
- New Constraints on Neutron Star Cooling from Chandra Observations of 3C 58. *Patrick O. Slane, David J. Helfand, & Stephen S. Murray*. 571, L45 (2002)
- SLATER, G. L. Large-Scale Solar Coronal Structures in Soft X-Rays and Their Relationship to the Magnetic Flux. *E. E. Benevolenskaya, A. G. Kosovichev, J. R. Lemen, P. H. Scherrer, & G. L. Slater*. 571, L181 (2002)
- SMARTT, S. J. See MAZZALI, P. A., et al. The Type Ic Supernova SN 2002ap. On the Progenitor of the Type Ic Supernova 2002ap. *S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen*. 572, L147 (2002)
- SMECKER-HANE, TAMMY A. The Star Formation History of the Large Magellanic Cloud: Erratum (ApJ, 566, 239 [2002]). *Tammy A. Smecker-Hane, Andrew A. Cole, John S. Gallagher III, & Peter B. Stetson*. 572, 1083 (2002) (Orig. paper in 566, 239 (2002))
- SMEE, STEPHEN. See ZHAO, YITONG, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- SMITH, BRADFORD A. Embedded Star Formation in the Eagle Nebula. *Rodger I. Thompson, Bradford A. Smith, & J. Jeff Hester*. 570, 749 (2002)
- SMITH, CHRIS. See GREEN, PAUL J., et al. Chandra Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens?
- SMITH, R. J. Discovery of Radio-loud Broad Absorption Line Quasars Using Ultraviolet Excess and Deep Radio Selection: Erratum (ApJ, 505, L17 [1998]). *M. S. Brotherton, W. van Breugel, R. J. Smith, B. J. Boyle, T. Shanks, S. M. Croom, L. Miller, & R. H. Becker*. 571, L191 (2002)
- SNEEDEN, S. A. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- SNEEDEN, CHRISTOPHER. See COWAN, JOHN J., et al. The Chemical Composition and Age of the Metal-poor Halo Star BD +17° 3248.
- SNIR, YEHUDA. See ZHAO, YITONG, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- SOBOTKA, M. Infrared Photometry of Solar Photospheric Structures. II. Center-to-Limb Variation of Active Regions. *M. Sánchez Cuberes, M. Vázquez, J. A. Bonet, & M. Sobotka*. 570, 886 (2002)
- SOKER, NOAM. X-Ray Emission from Central Binary Systems of Planetary Nebulae. *Noam Soker & Joel H. Kastner*. 570, 245 (2002)
- On the Formation of Multiple Arcs around Asymptotic Giant Branch Stars. *Noam Soker*. 570, 369 (2002)
- The Effects of Planets and Brown Dwarfs on Stellar Rotation and Mass Loss. *Mario Livio & Noam Soker*. 571, L161 (2002)
- SOMERVILLE, R. S. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.

- SOMMERVILLE, RACHEL S. Can Photoionization Squelching Resolve the Substructure Crisis? *Rachel S. Sommerville*. 572, L23 (2002)
- SONNEBORN, GEORGE. See PUN, CHUN S. J., et al. Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- SORIA, ROBERTO. XMM-Newton Observation of the Spiral Galaxy M74 (NGC 628). *Roberto Soria & Albert K. H. Kong*. 572, L33 (2002)
- SPARKS, WILLIAM. Will Jets Identify the Progenitors of Type Ia Supernovae? *Mario Livio, Adam Riess, & William Sparks*. 571, L99 (2002)
- SPARKS, WILLIAM B. The Nuclei of Radio Galaxies in the Ultraviolet: The Signature of Different Emission Processes. *Marco Chiaberge, F. Duccio Macchetto, William B. Sparks, Alessandro Capetti, Mark G. Allen, & André R. Martel*. 571, 247 (2002)
- SPECK, ANGELA. Two Subclasses of Proto-Planetary Nebulae: Model Calculations. *Margaret Meixner, Toshiya Ueta, Matthew Bobrowsky, & Angela Speck*. 571, 936 (2002)
- SPELGER, DAVID N. How Lumpy Is the Milky Way's Dark Matter Halo? *Kathryn V. Johnston, David N. Spergel, & Christian Haydn*. 570, 656 (2002)
- SPINOGLIO, LUIGI. The Far-Infrared Energy Distributions of Seyfert and Starburst Galaxies in the Local Universe: Infrared Space Observatory Photometry of the 12 Micron Active Galaxy Sample. *Luigi Spinoglio, Paola Andreani, & Matthew A. Malkan*. 572, 105 (2002)
- SPINRAD, HYRON. A Galactic Wind at  $z = 5.190$ . *Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Dey, Wil van Breugel, Win de Vries, & Michiel Reuland*. 570, 92 (2002)
- SPIROCK, THOMAS J. Rapid Changes in the Longitudinal Magnetic Field Related to the 2001 April 2 X20 Flare. *Thomas J. Spirock, Vasil B. Yurchyshyn, & Haimin Wang*. 572, 1072 (2002)
- SRAMEK, RICHARD A. See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- STACEY, G. J. Resolving the Buried Starburst in Arp 299. *V. Charmandaris, G. J. Stacey, & G. Gull*. 571, 282 (2002)
- STAIRS, I. H. See CAMILO, F., et al. Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope.
- STANEV, TODOR. Ultrahigh-Energy Cosmic-Ray Propagation in the Galaxy: Clustering versus Isotropy. *Jaime Alvarez-Muñiz, Ralph Engel, & Todor Stanev*. 572, 185 (2002)
- STANSBERRY, J. A. The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. *J. P. Aufdenberg, P. H. Hauschildt, E. Baron, T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry*. 570, 344 (2002)
- STANTON, N. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- STAPELFELDT, KARL R. Hubble Space Telescope/WFPC2 Images of the GG Tauri Circumbinary Disk. *John E. Krist, Karl R. Stapelfeldt, & Alan M. Watson*. 570, 785 (2002)
- STAUFFER, JOHN R. Discovery of an Edge-On Disk in the MBM 12 Young Association. *Ray Jayawardhana, K. L. Luhman, Paola D'Alessio, & John R. Stauffer*. 571, L51 (2002)
- STEBBINS, ALBERT. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- STECKLUM, B. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- STEELE, IAIN A. An Infrared Ring Nebula around MSX5C G358.5391+00.1305: The True Nature of Suspected Planetary Nebula Wray 17-96 Determined via Direct Imaging and Spectroscopy. *Michael P. Egan, J. Simon Clark, Donald R. Mizuno, Sean J. Carey, Iain A. Steele, & Stephan D. Price*. 572, 288 (2002)
- STEIDEL, C. Westphal-MMD 11: An Interacting Luminous Lyman Break Galaxy. *S. C. Chapman, A. Shapley, C. Steidel, & R. Windhorst*. 572, L1 (2002)
- STEIDEL, CHARLES C. The Kinematic Connection between Absorbing Gas toward QSOs and Galaxies at Intermediate Redshift. *Charles C. Steidel, Juna A. Kolmeier, Alice E. Shapley, Christopher W. Churchill, Mark Dickinson, & Max Pettini*. 570, 526 (2002)
- STEIN, R. F. Dynamic Hydrogen Ionization. *Mats Carlsson & R. F. Stein*. 572, 626 (2002)
- STEINACKER, ADRIANE. Three-dimensional Magnetohydrodynamic Simulations of an Accretion Disk with Star-Disk Boundary Layer. *Adriane Steinacker & John C. B. Papaloizou*. 571, 413 (2002)
- STEINLE, H. See MCCONNELL, M. L., et al. The Soft Gamma-Ray Spectral Variability of Cygnus X-1.
- STERN, DANIEL. A Galactic Wind at  $z = 5.190$ . *Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Dey, Wil van Breugel, Win de Vries, & Michiel Reuland*. 570, 92 (2002)
- STETSON, PETER B. The Star Formation History of the Large Magellanic Cloud: Erratum (ApJ, 566, 239 [2002]). *Tammy A. Smecker-Hane, Andrew A. Cole, John S. Gallagher III, & Peter B. Stetson*. 572, 1083 (2002) (Orig. paper in 566, 239 (2002))
- STEVENS, I. R. Australia Telescope Compact Array Radio Imaging of the Proplyd-like Objects in the Giant H II Region NGC 3603. *A. Mücke, B. S. Koribalski, A. F. J. Moffat, M. F. Corcoran, & I. R. Stevens*. 571, 366 (2002)
- STOCKTON, ALAN. The Extended Emission-Line Region of 4C 37.43. *Alan Stockton, John W. MacKenty, Esther M. Hu, & Tae-Sun Kim*. 572, 735 (2002)
- STOEFL, W. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- STONE, JAMES M. The Effect of the Hall Term on the Nonlinear Evolution of the Magnetorotational Instability. I. Local Axisymmetric Simulations. *Takayoshi Sano & James M. Stone*. 570, 314 (2002)
- STOUGHTON, C. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- STOUGHTON, CHRISTOPHER. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- STRACHAN, L. Empirical Densities, Kinetic Temperatures, and Outflow Velocities in the Equatorial Streamer Belt at Solar Minimum. *L. Strachan, R. Suleiman, A. V. Panasyuk, D. A. Biesecker, & J. L. Kohl*. 571, 1008 (2002)
- STRAUSS, MICHAEL A. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- STRONG, A. W. See MCCONNELL, M. L., et al. The Soft Gamma-Ray Spectral Variability of Cygnus X-1.
- The Cosmic-Ray Luminosity of the Galaxy. *V. A. Dogiel, V. Schönfelder, & A. W. Strong*. 572, L157 (2002)
- STRUCK, CURTIS. Models of Planets and Brown Dwarfs in Mira Winds. *Curtis Struck, Babak E. Cohan, & Lee Anne Willson*. 572, L83 (2002)
- SUBBARAO, MARK. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- SUBRAHMANYA, R. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- SUCHKOV, A. A. Candidate Pre-Main-Sequence F Stars with Circumstellar Dust Identified Using Combined 2MASS and *uvby* Data. *A. A. Suchkov, A. B. Schultz, & C. M. Lisse*. 570, L29 (2002)
- SUGERMAN, BEN E. K. Evolution and Geometry of Hot Spots in Supernova Remnant 1987A. *Ben E. K. Sugerman, Stephen S. Lawrence, Arlin P. S. Crots, Patrice Bouchet, & Steve R. Heathcote*. 572, 209 (2002)
- SULEIMAN, R. Empirical Densities, Kinetic Temperatures, and Outflow Velocities in the Equatorial Streamer Belt at Solar Minimum. *L. Strachan, R. Suleiman, A. V. Panasyuk, D. A. Biesecker, & J. L. Kohl*. 571, 1008 (2002)
- SULLIVAN, N. S. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.



- SUNTZEFF, NICHOLAS B. See PUN, CHUN S. J., et al. Modeling the *Hubble Space Telescope* Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- SURDEJ, J. See ALCALDE, D., et al. QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring.
- SUTHERLAND, RALPH S. Are the Narrow-Line Regions in Active Galaxies Dusty and Radiation Pressure Dominated? *Michael A. Dopita, Brent A. Groves, Ralph S. Sutherland, Luc Binette, & Gerald Cecil.* 572, 753 (2002)
- SUZUKI, J. See ISHIGURO, M., et al. First Detection of an Optical Dust Trail along the Orbit of 22P/Kopff.
- SUZUKI, NAO. The UCSD HIRES/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Howk, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Rubin, & Nao Suzuki.* 571, 693 (2002)
- SVAPUDI, ISTVÁN. See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- SWANK, J. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- SWORDY, S. P. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- SZALAY, ALEXANDER S. See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- SZAPUDI, ISTVÁN. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data. *István Szapudi, Joshua A. Frieman, Roman Scoccimarro, Alexander S. Szalay, Andrew J. Connolly, Scott Dodelson, Daniel J. Eisenstein, James E. Gunn, David Johnston, Stephen Kent, Jon Loveday, Avery Meiksin, Robert C. Nichol, Ryan Scranton, Albert Stebbins, Michael S. Vogeley, James Annis, Neta A. Bahcall, J. Brinkman, István Csabai, Mamoru Doi, Masataka Fukugita, Željko Ivezić, Rita S. J. Kim, Gillian R. Knapp, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Timothy A. McKay, Jeff Munn, John Peoples, Jeff Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 570, 75 (2002)
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- SZOKOLY, GYULA. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- TAFALLA, MARIO. Dense Cores in Dark Clouds. XIV. N $_2$ H $^+$  (1–0) Maps of Dense Cloud Cores. *Paola Caselli, Priscilla J. Benson, Philip C. Myers, & Mario Tafalla.* 572, 238 (2002)
- TAGLIAFERRI, G. The Brera Multiscale Wavelet Detection Algorithm Applied to the *Chandra* Deep Field–South: Deeper and Deeper. *A. Moretti, D. Lazzati, S. Campana, & G. Tagliaferri.* 570, 502 (2002)
- See ZHANG, Y. H., et al. Four Years of Monitoring Blazar PKS 2155–304 with *BeppoSAX*: Probing the Dynamics of the Jet.
- TAKADA, MASAHIRO. Lognormal Property of Weak-Lensing Fields. *Atsushi Taruya, Masahiro Takada, Takashi Hamana, Issha Kayo, & Toshifumi Futamase.* 571, 638 (2002)
- TAKADA-HIDAL, M. See MAZZALI, P. A., et al. The Type Ic Hypervelocity SN 2002ap.
- TAKAGISHI, K. See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- TAKAHASHI, MASAOKI. Transmagnetosonic Accretion in a Black Hole Magnetosphere. *Masaaki Takahashi.* 570, 264 (2002)
- Magnetohydrodynamic Shock Conditions for Accreting Plasma onto Kerr Black Holes. *I. Masaaki Takahashi, Darrell Rilett, Keigo Fukumura, & Sachiko Tsuruta.* 572, 950 (2002)
- TAKAHASHI, T. ASCA View of the Supernova Remnant  $\gamma$  Cygni (G78.2+2.1): Bremsstrahlung X-Ray Spectrum from Loss-flattened Electron Distribution. *Y. Uchiyama, T. Takahashi, F. A. Aharonian, & J. R. Mattox.* 571, 866 (2002)
- TAKATSUKA, T. Confronting Neutron Star Cooling Theories with New Observations. *S. Tsuruta, M. A. Teter, T. Takatsuka, T. Tatsumi, & R. Tamagaki.* 571, L143 (2002)
- TAKEDA, M. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above 10 $^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- TAKEUCHI, S. See HORVÁTH, Á., et al. Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction.
- TAKEUCHI, TSUTOMU T. A Bridge from Optical to Infrared Galaxies: Explaining Local Properties and Predicting Galaxy Counts and the Cosmic Background Radiation. *Tomonori Totani & Tsutomu T. Takeuchi.* 570, 470 (2002)
- TAM, CINDY. Spectral Components of the Radio Composite Supernova Remnant G11.2–0.3. *Cindy Tam, Mallory S. E. Roberts, & Victoria M. Kaspi.* 572, 202 (2002)
- TAMAGAKI, R. Confronting Neutron Star Cooling Theories with New Observations. *S. Tsuruta, M. A. Teter, T. Takatsuka, T. Tatsumi, & R. Tamagaki.* 571, L143 (2002)
- TAMAGAWA, T. See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- TANIGAWA, T. See ISHIGURO, M., et al. First Detection of an Optical Dust Trail along the Orbit of 22P/Kopff.
- TANNER, D. B. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- TARUYA, ATSUSHI. Lognormal Property of Weak-Lensing Fields. *Atsushi Taruya, Masahiro Takada, Takashi Hamana, Issha Kayo, & Toshifumi Futamase.* 571, 638 (2002)
- TATSUMI, T. Confronting Neutron Star Cooling Theories with New Observations. *S. Tsuruta, M. A. Teter, T. Takatsuka, T. Tatsumi, & R. Tamagaki.* 571, L143 (2002)
- TAVECCIO, F. A Survey of Extended Radio Jets in Active Galactic Nuclei with *Chandra* and the *Hubble Space Telescope*: First Results. *Rita M. Sambruna, L. Maraschi, F. Tavecchio, C. Megan Urry, C. C. Cheung, G. Chartas, R. Scarpa, & Jessica K. Gambill.* 571, 206 (2002)
- See ZHANG, Y. H., et al. Four Years of Monitoring Blazar PKS 2155–304 with *BeppoSAX*: Probing the Dynamics of the Jet.
- TAVENNER, T. See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- TAYLOR, A. R. The Central Binary and Surrounding Nebula of the Symbiotic Star V1016 Cygni. *C. Brocksopp, M. F. Bode, S. P. S. Eyres, M. M. Crocker, R. Davis, & A. R. Taylor.* 571, 947 (2002)
- TEGMARK, MAX. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data. *Max Tegmark, Scott Dodelson, Daniel J. Eisenstein, Vijay Narayanan, Roman Scoccimarro, Ryan Scranton, Michael A. Strauss, Andrew Connolly, Joshua A. Frieman, James E. Gunn, Lam Hui, Bhuvnesh Jain, David Johnston, Stephen Kent, Jon Loveday, Robert C. Nichol, Liam O'Connell, Ravi K. Sheth, Albert Stebbins, Alexander S. Szalay, István Szapudi, Michael S. Vogeley, Idit Zehavi, James Annis, Neta A. Bahcall, J. Brinkmann, István Csabai, Mamoru Doi, Masataka Fukugita, Greg Hennessy, Željko Ivezić, Gillian R. Knapp, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Timothy A. McKay, Peter Kunszt, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Michael Richmond, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 571, 191 (2002)
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- TEMI, PASQUALE. Mid-Infrared Observation of Mass Loss in Elliptical Galaxies. *Alex Athey, Joel Bregman, Jesse Bregman, Pasquale Temi, & Marc Sauvage.* 571, 272 (2002)
- TENNANT, ALLYN F. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- TERADA, HIROSHI. Velocity-resolved [Fe II] Line Spectroscopy of L1551 IRS 5: A Partially Ionized Wind under Collimation around an Ionized Fast Jet. *Tae-Soo Pyo, Masahiko Hayashi, Naoto Kobayashi, Hiroshi Terada, Miwa Goto, Takuya Yamashita, Alan T. Tokunaga, & Yoichi Itoh.* 570, 724 (2002)
- Imaging and Spatially Resolved Spectroscopy of AFGL 2688 in the Thermal Infrared Region. *Miwa Goto, Naoto Kobayashi, Hiroshi Terada, & A. T. Tokunaga.* 572, 276 (2002)
- TESHIMA, M. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above 10 $^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.

- TESTI, L. A Young Very Low Mass Object Surrounded by Warm Dust. *L. Testi, A. Natta, E. Oliva, F. D'Antona, F. Comerón, C. Baffa, G. Comoretto, & S. Gennari*. 571, L155 (2002)
- TESTI, LEONARDO. The Formation of Massive Stars. I. High-Resolution Millimeter and Radio Studies of High-Mass Protostellar Candidates. *Sergio Molinari, Leonardo Testi, Luis F. Rodríguez, & Qizhou Zhang*. 570, 758 (2002)
- TETER, M. A. Confronting Neutron Star Cooling Theories with New Observations. *S. Tsuruta, M. A. Teter, T. Takatsuka, T. Tatsumi, & R. Tamagaki*. 571, L143 (2002)
- THOMAS, DANIEL. Recurring Outbursts and Nuclear Fragmentation of Comet C/2001 A2 (LINEAR). *Zdenek Sekanina, Emmanuel Jehin, Hermann Boehnhardt, Xavier Bonfils, Oliver Schuetz, & Daniel Thomas*. 572, 679 (2002)
- THOMPSON, R. R. Time-dependent Asymmetries in the Atmosphere of the Mira Variable R Trianguli through Infrared Interferometry. *R. R. Thompson, M. J. Creech-Eakman, & R. L. Akeson*. 570, 373 (2002)
- THOMPSON, RODGER I. Embedded Star Formation in the Eagle Nebula. *Rodger I. Thompson, Bradford A. Smith, & J. Jeff Hester*. 570, 749 (2002)
- THOMSON, D. J. The Peak Flux Distribution of Solar Radio Bursts. *Gelu M. Nita, Dale E. Gary, L. J. Lanzetta, & D. J. Thomson*. 570, 423 (2002)
- THORSETT, S. E. Very Long Baseline Array Measurement of Nine Pulsar Parallaxes. *Walter F. Brisken, John M. Benson, W. M. Goss, & S. E. Thorsett*. 571, 906 (2002)
- TIELENS, A. G. G. M. The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte*. 570, 708 (2002)
- TINNEY, C. G. Two Extrasolar Planets from the Anglo-Australian Planet Search. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, & Brad D. Carter*. 571, 528 (2002)
- TITARCHUK, LEV. Can Any "Invariants" Be Revealed in Quasi-periodic Phenomena Observed from Scorpius X-1? *Sergey Kuznetsov & Lev Titarchuk*. 571, L137 (2002)
- TITARCHUK, LEV. Three Type I X-Ray Bursts from Cygnus X-2: Application of Analytical Models for Neutron Star Mass and Radius Determination. *Lev Titarchuk & Nikolai Shaposhnikov*. 570, L25 (2002)
- TOKUNAGA, A. T. Imaging and Spatially Resolved Spectroscopy of AFGL 2688 in the Thermal Infrared Region. *Miwa Goto, Naoto Kobayashi, Hiroshi Terada, & A. T. Tokunaga*. 572, 276 (2002)
- TOKUNAGA, ALAN T. Velocity-resolved [Fe II] Line Spectroscopy of L1551 IRS 5: A Partially Ionized Wind under Collimation around an Ionized Fast Jet. *Tae-Soo Pyo, Masahiko Hayashi, Naoto Kobayashi, Hiroshi Terada, Miwa Goto, Takuya Yamashita, Alan T. Tokunaga, & Yoichi Itoh*. 570, 724 (2002)
- TOMITA, H. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- TOOMRE, JURI. Penetration and Overshooting in Turbulent Compressible Convection. *Nicholas H. Brummell, Thomas L. Clune, & Juri Toomre*. 570, 825 (2002)
- Evolving Submerged Meridional Circulation Cells within the Upper Convection Zone Revealed by Ring-Diagram Analysis. *Deborah A. Haber, Bradley W. Hindman, Juri Toomre, Richard S. Bogart, Rasmus M. Larsen, & Frank Hill*. 570, 855 (2002)
- Turbulent Convection under the Influence of Rotation: Sustaining a Strong Differential Rotation. *Allan Sacha Brun & Juri Toomre*. 570, 865 (2002)
- TORII, K. See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- TORII, R. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- TOTANI, TOMONORI. A Bridge from Optical to Infrared Galaxies: Explaining Local Properties and Predicting Galaxy Counts and the Cosmic Background Radiation. *Tomonori Totani & Tsutomu T. Takeuchi*. 570, 470 (2002)
- TOWNSLEY, L. K. See MAEDA, Y., et al. A *Chandra* Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center?
- TOZZI, PAOLO. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- TRAUB, WESLEY A. A Coronagraph with a Band-limited Mask for Finding Terrestrial Planets. *Marc J. Kuchner & Wesley A. Traub*. 570, 900 (2002)
- TREVES, A. See ZHANG, Y. H., et al. Four Years of Monitoring Blazar PKS 2155-304 with *BeppoSAX*: Probing the Dynamics of the Jet.
- TRUDOLYUBOV, SERGEY P. On the X-Ray Source Luminosity Distributions in the Bulge and Disk of M31: First Results from the *XMM-Newton* Survey. *Sergey P. Trudolyubov, Konstantin N. Borozdin, William C. Priedhorsky, Keith O. Mason, & France A. Cordova*. 571, L17 (2002)
- TRURAN, JAMES W. See COWAN, JOHN J., et al. The Chemical Composition and Age of the Metal-poor Halo Star BD +17° 3248.
- TRUSHKIN, S. A. See UEDA, Y., et al. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105.
- TSUJIMOTO, MASAHIRO. *Chandra* and *ASCA* Observations of the X-Ray-brightest T Tauri Stars in the  $\rho$  Ophiuchi Cloud. *Kensuke Imanishi, Masahiro Tsujimoto, & Katsuji Koyama*. 572, 300 (2002)
- TSUJIMOTO, TAKUJI. History of Milky Way Dwarf Spheroidal Galaxies Imprinted on Abundance Patterns of Neutron-Capture Elements. *Takuji Tsujimoto & Toshikazu Shigeyama*. 571, L93 (2002)
- TSURUTA, S. Confronting Neutron Star Cooling Theories with New Observations. *S. Tsuruta, M. A. Teter, T. Takatsuka, T. Tatsumi, & R. Tamagaki*. 571, L143 (2002)
- TSURUTA, SACHIKO. Magnetohydrodynamic Shock Conditions for Accreting Plasma onto Kerr Black Holes. *I. Muraaki Takahashi, Darrell Rilett, Keigo Fukumura, & Sachiko Tsuruta*. 572, 950 (2002)
- TSUSHIMA, I. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- TUCKER, D. L. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- TUCKER, DOUGLAS L. See SZAPUDI, ISTVAN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZHAVERI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- TUFTE, S. L. WHAM Observations of H $\alpha$  From High-Velocity Clouds: Are they Galactic or Extragalactic? *S. L. Tufte, J. D. Wilson, G. J. Madsen, L. M. Haffner, & R. J. Reynolds*. 572, L153 (2002)
- TURATTO, M. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- TURNER, T. J. The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra*. 571, 256 (2002)
- See GEORGE, I. M., et al. The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516.
- TURNISHEK, DAVID A. The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- TYTEL, S. See HORVATH, Á., et al. Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction.
- TYTLER, DAVID. The UCSD HIRES/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Hewitt, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Rubin, & Nao Suzuki*. 571, 693 (2002)
- UCHIHORI, Y. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment.
- UCHIYAMA, Y. *ASCA* View of the Supernova Remnant  $\gamma$  Cygni (G78.2+2.1): Bremsstrahlung X-Ray Spectrum from Loss-flattened Electron Distribution. *Y. Uchiyama, T. Takahashi, F. A. Aharonian, & J. R. Mattox*. 571, 866 (2002)
- UEDA, Y. Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105. *Y. Ueda, K. Yamaoka, C. Sánchez-Fernández, V. Dhawan, S. Chary, J. E. Grove, M. McCollough, A. J. Castro-Tirado, F. Mirabel, K. Kohno, M. Feroci, P. Casella, S. A. Trushkin, H. Castaneda, J. Rodríguez, P. Durouchoux, K. Ebisawa, T. Kotani, J. Swank, & H. Inoue*. 571, 918 (2002)
- UENO, M. See ISHIGURO, M., et al. First Detection of an Optical Dust Trail along the Orbit of 22P/Kopff.
- UETA, TOSHIYA. Two Subclasses of Proto-Planetary Nebulae: Model Calculations. *Margaret Meixner, Toshiya Ueta, Matthew Bobrowsky, & Angela Speck*. 571, 936 (2002)
- UMEDA, H. See MAZZALI, P. A., et al. The Type Ic Hypernova SN 2002ap.
- UOMOTO, ALAN. See ZHAVERI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.

- UPDIKE, ADRIA C. Correlating Transition Region Explosive Events With Extreme-Ultraviolet Brightenings. *Amy R. Winebarger, Adria C. Updike, & Katherine K. Reeves*. 570, L105 (2002)
- URBAN, JOEL. The Extraordinary Cataclysmic Binary RU Pegasi: The Hottest White Dwarf in a Dwarf Nova? *Edward M. Sion & Joel Urban*. 572, 456 (2002)
- URRY, C. MEGAN. A Survey of Extended Radio Jets in Active Galactic Nuclei with *Chandra* and the *Hubble Space Telescope*: First Results. *Rita M. Sambruna, L. Maraschi, F. Tavecchio, C. Megan Urry, C. C. Cheung, G. Chartas, R. Scarpa, & Jessica K. Gambill*. 571, 206 (2002)
- USOV, VLADIMIR V. Photo Splitting in the Superstrong Magnetic Fields of Pulsars. *Vladimir V. Usov*. 572, L87 (2002)
- USTYUGOVA, G. V. Poynting Jets from Accretion Disks. *R. V. E. Lovelace, H. Li, A. V. Koldoba, G. V. Ustyugova, & M. M. Romanova*. 572, 445 (2002)
- USUL, F. See ISHIGURO, M., et al. First Detection of an Optical Dust Trail along the Orbit of 22P/Kopff.
- UZDENSKY, DMITRI A. Partial Field Opening and Current Sheet Formation in the Disk Magnetosphere. *Dmitri A. Uzdensky*. 572, 432 (2002)
- VALENTI, JEFF A. The Far-Ultraviolet Spectrum of TW Hydrae. I. Observations of H<sub>2</sub> Fluorescence. *Gregory J. Herczeg, Jeffrey L. Linsky, Jeff A. Valenti, Christopher M. Johns-Krull, & Brian E. Wood*. 572, 310 (2002)
- VAN BIBBER, K. See ASZTALOS, S. J., et al. Experimental Constraints on the Axion Dark Matter Halo Density.
- VAN BREUGEL, W. Discovery of Radio-loud Broad Absorption Line Quasars Using Ultraviolet Excess and Deep Radio Selection: Erratum (ApJ, 505, L17 [1998]). *M. S. Brotherton, W. van Breugel, R. J. Smith, B. J. Boyle, T. Shanks, S. M. Croom, L. Miller, & R. H. Becker*. 571, L191 (2002)
- VAN BREUGEL, WIL. A Galactic Wind at  $z = 5.190$ . *Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Day, Wil van Breugel, Win de Vries, & Michiel Reuland*. 570, 92 (2002)
- VANDENBERG, DON A. Models of Metal-poor Stars with Gravitational Settling and Radiative Accelerations. II. The Age of the Oldest Stars. *Don A. Vandenberg, O. Richard, G. Michaud, & J. Richer*. 571, 487 (2002)
- VANDEN BERK, D. E. See PARK, H. S., et al. LOTIS. Super-LOTIS. Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- VANDEN BERK, DAN. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- VAN DER KLIS, M. See MILLER, J. M., et al. Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the *XMM-Newton*/EPIC-pn Spectrum of XTE J1650–500.
- VAN DER KLIS, MICHEL. Very Low Luminosities from the Accretion-driven Millisecond X-Ray Pulsar SAX J1808.4–3658 during Quiescence. *Rudy Wijnands, Lucien Kuiper, Jean in 't Zand, Tadayasu Dotani, Michiel van der Klis, & John Heise*. 571, 429 (2002)
- A Unified Description of the Timing Features of Accreting X-Ray Binaries. *Tomaso Belloni, Dimitrios Psaltis, & Michiel van der Klis*. 572, 392 (2002)
- VAN DER SPEK, R. See PRICE, P. A., et al. GRB 010921: Discovery of the First *High Energy Transient Explorer* Afterglow.
- See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- VAN DER TAK, F. F. S. Detection of Triply Deuterated Ammonia in the Barabard I Cloud. *D. C. Lis, E. Roueff, M. Gerin, T. G. Phillips, L. H. Coudert, F. F. S. van der Tak, & P. Shilke*. 571, L55 (2002)
- VAN DISHOECK, E. F. The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte*. 570, 708 (2002)
- VAN DYK, DAVID A. Statistics, Handle with Care: Detecting Multiple Model Components with the Likelihood Ratio Test. *Rostislav Protosov, David A. van Dyk, Alanna Connors, Vinay L. Kashyap, & Aneta Szymeniowska*. 571, 545 (2002)
- VAN DYK, SCHUYLER D. See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- VAN KERKWIJK, M. H. The Parallax and Proper Motion of RX J1856.5–3754 Revisited. *D. L. Kaplan, M. H. van Kerkwijk, & J. Anderson*. 571, 447 (2002)
- VAN PARADIS, J. Extended Power-Law Decays in BATSE Gamma-Ray Bursts: Signatures of External Shocks? *T. W. Giblin, V. Connaughton, J. van Paradijs, R. D. Preece, M. S. Briggs, C. Kouveliotou, R. A. M. J. Wijers, & G. J. Fishman*. 570, 572 (2002)
- VASSILIEV, V. V. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- VAZ CASTILHO, BRUNO. Detailed Analysis of Nearby Bulgelike Dwarf Stars. II. Lithium Abundances. *Luciana Pompéia, Beatriz Barbui, Michel Grenon, & Bruno Vaz Castilho*. 570, 820 (2002)
- VÁZQUEZ, M. Infrared Photometry of Solar Photospheric Structures. II. Center-to-Limb Variation of Active Regions. *M. Sánchez Cuberes, M. Vázquez, J. A. Bonet, & M. Sobotka*. 570, 886 (2002)
- VÁZQUEZ, R. A. See SHINOZAKI, K., et al. Upper Limit on Gamma-Ray Flux above 10<sup>19</sup> eV Estimated by the Akeno Giant Air Shower Array Experiment.
- VÁZQUEZ-SEMADENI, ENRIQUE. Velocity Structure of the Interstellar Medium as Seen by the Spectral Correlation Function. *Javier Ballesteros-Paredes, Enrique Vázquez-Semadeni, & Alyssa A. Goodman*. 571, 334 (2002)
- VEDRENNE, G. See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- VEILLEUX, SYLVAIN. Keck Absorption-Line Spectroscopy of Galactic Winds in Ultraluminous Infrared Galaxies. *David S. Rupke, Sylvain Veilleux, & D. B. Sanders*. 570, 588 (2002)
- VENKATESAN, APARNA. Mutual Constraints between Reionization Models and Parameter Extraction from Cosmic Microwave Background Data. *Aparna Venkatesan*. 572, 15 (2002)
- VERMAAK, P. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- VESTERGAARD, M. Determining Central Black Hole Masses in Distant Active Galaxies. *M. Vestergaard*. 571, 733 (2002)
- VIDAL-MADJAR, A. Hydrogen Column Density Evaluations toward Capella: Consequences on the Interstellar Deuterium Abundance. *A. Vidal-Madjar & R. Ferlet*. 571, L169 (2002)
- VIEGAS, S. M. The O I Line Emission in Active Galactic Nuclei Revisited. *A. Rodríguez-Ardila, S. M. Viegas, M. G. Pastoriza, L. Prato, & Carlos J. Donzelli*. 572, 94 (2002)
- VIGNALI, C. See LA FRANCA, F., et al. The *BeppoSAX* High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution.
- See COMASTRI, A., et al. The *HELLAS2 XMM* Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy.
- VILLASENOR, J. See RICKER, G., et al. GRB 010921: Localization and Observations by the *High Energy Transient Explorer* Satellite.
- VILLAVIER, EVA. The Dynamical Evolution of the Circumstellar Gas around Low- and Intermediate-Mass Stars. I. The Asymptotic Giant Branch. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado*. 571, 880 (2002)
- VITTORINI, V. Supermassive Black Holes in Galactic Nuclei. *A. Cavaliere & V. Vittorini*. 570, 114 (2002)
- VITTORIO, N. See POLENTA, G., et al. Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis.
- VOGELEY, MICHAEL S. Two-dimensional Topology of the Two-Degree Field Galaxy Redshift Survey. *Fiona Hoyle, Michael S. Vogeley, & J. Richard Gott III*. 570, 44 (2002)
- See SZAPUDI, ISTVÁN, et al. Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data.
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- See TEGMARK, MAX, et al. The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data.
- See DODELSON, SCOTT, et al. The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data.
- VOGT, NICOLE P. See IM, MYUNGSHIN, et al. The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ .
- VON ROSENVEINGT, T. Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopalswamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Rosenvinge*. 572, L103 (2002)
- VON SCHWARZENBERG, J. See HORVÁTH, Á., et al. Cross Section for the Astrophysical <sup>14</sup>C(n, γ)<sup>15</sup>C Reaction via the Inverse Reaction.
- VREESWIJK, P. M. On the Progenitor of the Type Ic Supernova 2002ap. *S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen*. 572, L147 (2002)
- VUCETICH, HECTOR. Testing Theories That Predict Time Variation of Fundamental Constants. *Susana J. Landau & Hector Vucetich*. 570, 463 (2002)

- WADDELL, PATRICK. See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- WADSLEY, JAMES. Three-dimensional Simulations of the Gravitational Collapse of Logotropic Molecular Cloud Cores. *Michael A. Reid, Ralph E. Pudritz, & James Wadsley*. 570, 231 (2002)
- WAGNER, R. MARK. Infrared Photometric Variability of GX 13+1 and GX 17+2. *Reba M. Bandyopadhyay, Philip A. Charles, Tariq Shahbaz, & R. Mark Wagner*. 570, 793 (2002)
- WAITE, J. HUNTER. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- WAKELY, S. P. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- WALTER, FABIAN. ROSAT X-Ray Observations of the Dwarf Galaxy Holmberg II. *Jürgen Kerp, Fabian Walter, & Elias Brinks*. 571, 809 (2002)
- WANG, EDWARD Y. M. Numerical Models of Binary Neutron Star System Mergers. II. Coalescing Models with Post-Newtonian Radiation Reaction Forces. *Alan C. Calder & Edward Y. M. Wang*. 570, 303 (2002)
- WANG, HAIMIN. Rapid Changes in the Longitudinal Magnetic Field Related to the 2001 April 2 X2.0 Flare. *Thomas J. Spirook, Vasyli B. Yurchyshyn, & Haimin Wang*. 572, 1072 (2002)
- WANG, JIALONG. The Large-Scale Coronal Field Structure and Source Region Features for a Halo Coronal Mass Ejection. *Tongjiang Wang, Yihua Yan, Jialong Wang, H. Kurokawa, & K. Shibata*. 572, 580 (2002)
- WANG, JUNXIAN. See NORMAN, COLIN, et al. A Classic Type 2 Quasar.
- WANG, LIFAN. See PUN, CHUN S. J., et al. Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- WANG, Q. D. Detection of X-Ray Emission from the Arches Cluster near the Galactic Center. *F. Yusef-Zadeh, C. Law, M. Wurdle, Q. D. Wang, A. Fruscione, C. C. Lang, & A. Cotera*. 570, 665 (2002)
- WANG, TONGJIANG. The Large-Scale Coronal Field Structure and Source Region Features for a Halo Coronal Mass Ejection. *Tongjiang Wang, Yihua Yan, Jialong Wang, H. Kurokawa, & K. Shibata*. 572, 580 (2002)
- Emergence and Drastic Breakdown of a Twisted Flux Rope to Trigger Strong Solar Flares in NOAA Active Region 9026. *Hiroki Kurokawa, Tongjiang Wang, & Takako T. Ishii*. 572, 598 (2002)
- WANG, YUN. A Universal Probability Distribution Function for Weak-lensing Amplification. *Yun Wang, Daniel E. Holz, & Dipak Munshi*. 572, L15 (2002)
- WARDLE, M. Detection of X-Ray Emission from the Arches Cluster near the Galactic Center. *F. Yusef-Zadeh, C. Law, M. Wurdle, Q. D. Wang, A. Fruscione, C. C. Lang, & A. Cotera*. 570, 665 (2002)
- WARGELIN, BRADFORD J. See DRAKE, JEREMY J., et al. Is RX J1856.5–3754 a Quark Star?
- WARK, R. M. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- WARNER, R. E. See HORVÁTH, Á., et al. Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction.
- WARREN, HARRY P. Temperature and Density Measurements in a Quiet Coronal Streamer. *Harry P. Warren & Andrew D. Warshall*. 571, 999 (2002)
- WARSHALL, ANDREW D. Temperature and Density Measurements in a Quiet Coronal Streamer. *Harry P. Warren & Andrew D. Warshall*. 571, 999 (2002)
- WATANABE, J. See ISHIGURO, M., et al. First Detection of an Optical Dust Trail along the Orbit of 22P/Kopff.
- WATANABE, JUN-ICHI. Revised Fluorescence Efficiencies of Cometary  $\text{NH}_2$ : Ammonia Abundance in Comets. *Hideyo Kawakita & Jun-ichi Watanabe*. 572, L177 (2002)
- WATANABE, NAOKI. Efficient Formation of Formaldehyde and Methanol by the Addition of Hydrogen Atom to CO in  $\text{H}_2\text{O}$ -CO Ice at 10 K. *Naoki Watanabe & Akira Kouchi*. 571, L173 (2002)
- WATSON, ALAN M. Hubble Space Telescope/WFPC2 Images of the GG Tauri Circumbinary Disk. *John E. Krist, Karl R. Stapelfeldt, & Alan M. Watson*. 570, 785 (2002)
- WATSON, R. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- WATSON, W. D. Gaussian Spectral Line Profiles of Astrophysical Masers. *W. D. Watson, A. P. Sarma, & M. S. Singleton*. 570, L37 (2002)
- WECHSLER, RISA H. The Las Campanas Distant Cluster Survey Correlation Function. *Anthony H. Gonzalez, Dennis Zaritsky, & Risa H. Wechsler*. 571, 129 (2002)
- WEEKES, T. C. See HORAN, D., et al. Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies.
- WEILER, KURT W. See POOLEY, DAVID, et al. X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S.
- WEINBERG, DAVID H. The Growth of Galaxies in Cosmological Simulations of Structure Formation. *Chigurupati Murali, Neal Katz, Lars Hernquist, David H. Weinberg, & Romeel Davé*. 571, 1 (2002)
- High-Redshift Galaxies in the Cold Dark Matter Models. *David H. Weinberg, Lars Hernquist, & Neal Katz*. 571, 15 (2002)
- See ZEHAVI, IDIT, et al. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data.
- Prospects for Determining the Equation of State of the Dark Energy: What Can Be Learned from Multiple Observables? *Jens Kujat, Anjela M. Linn, Robert J. Scherrer, & David H. Weinberg*. 572, 1 (2002)
- Dark Matter Properties and Halo Central Densities. *S. M. Khairul Alam, James S. Bullock, & David H. Weinberg*. 572, 34 (2002)
- WEINBERGER, R. A Wall of Dust around a Proto-Mira? *Albert A. Zijlstra & R. Weinberger*. 572, 1006 (2002)
- WEINER, J. See HORVÁTH, Á., et al. Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction.
- WEISSKOPF, MARTIN C. See ELSNER, RONALD F., et al. Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus.
- WERNER, KLAUS. See DRAKE, JEREMY J., et al. Is RX J1856.5–3754 a Quark Star?
- WHEELER, J. C. See BLOOM, J. S., et al. Detection of a Supernova Signature Associated with GRB 01121.
- WHEELER, J. CRAIG. See PUN, CHUN S. J., et al. Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A.
- WHITE, RAYMOND E., III. X-Ray Binaries and Globular Clusters in Elliptical Galaxies. *Raymond E. White III, Craig L. Sarazin, & Shrinivas R. Kulkarni*. 571, L23 (2002)
- WHITE, RICHARD L. Keck HIRES Spectroscopy of the Fe II Low-Ionization Broad Absorption Line FBQS 0840+3633: Evidence for Two Outflows on Different Scales. *Martijn de Kool, Robert H. Becker, Nahum Arav, Michael D. Gregg, & Richard L. White*. 570, 514 (2002)
- WHITTET, D. C. B. Hydrocarbons, Ices, and "XCN" in the Line of Sight toward the Galactic Center. *J. E. Chiar, A. J. Adamson, Y. J. Pendleton, D. C. B. Whittet, D. A. Caldwell, & E. L. Gibb*. 570, 198 (2002)
- WIELEBINSKI, R. See CAMILO, F., et al. Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope.
- WIERINGA, M. H. See PRICE, P. A., et al. GRB 01121: A Massive Star Progenitor.
- WIJERS, R. A. M. J. Extended Power-Law Decays in BATSE Gamma-Ray Bursts: Signatures of External Shocks? *T. W. Giblin, V. Connaughton, J. van Paradijs, R. D. Preece, M. S. Briggs, C. Kouveliotou, R. A. M. J. Wijers, & G. J. Fishman*. 570, 572 (2002)
- WIJNANDS, R. See MILLER, J. M., et al. Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the XMM-Newton/EPIC-pn Spectrum of XTE J1650–500.
- WIJNANDS, RUDY. Very Low Luminosities from the Accretion-driven Millisecond X-Ray Pulsar SAX J1808.4–3658 during Quiescence. *Rudy Wijnands, Lucien Kuiper, Jean in 't Zand, Tadayasu Dotani, Michiel van der Klis, & John Heise*. 571, 429 (2002)
- A Chandra Observation of the Globular Cluster Terzan 1: The Neutron Star X-Ray Transient X1732-304 in Quiescence. *Rudy Wijnands, Craig O. Heinke, & Jonathan E. Grindlay*. 572, 1002 (2002)
- WILKES, BELINDA J. Chandra Detection of Highest Redshift ( $z \sim 6$ ) Quasars in X-Rays. *Smita Mathur, Belinda J. Wilkes, & Himel Ghosh*. 570, L5 (2002)
- WILLIAMS, A. See AN, JIN H., et al. First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5.
- See ALBROW, M. D., et al. A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47.
- WILLIAMS, G. G. See PARK, H. S., et al. LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921.
- WILLMER, CHRISTOPHER N. A. See IM, MYUNGSHIN, et al. The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ .



- WILLSON, LEE ANNE. Models of Planets and Brown Dwarfs in Mira Winds. *Curtis Struck, Babak E. Cohan, & Lee Anne Willson*. 572, L83 (2002)
- WILSON, CHRISTINE D. Magnetic Fields in Star-forming Molecular Clouds. IV. Polarimetry of the Filamentary NGC 2068 Cloud in Orion B. *Brenda C. Matthews & Christine D. Wilson*. 571, 356 (2002)
- WILSON, COLLEEN A. A Decade in the Life of EXO 2030+375: A Multiwavelength Study of an Accreting X-Ray Pulsar. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, Silas Laycock, & J. Fabregat*. 570, 287 (2002)
- WILSON, J. See CHEN, HSIAO-WEN, et al. The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs.
- WILSON, J. D. WHAM Observations of H $\alpha$  From High-Velocity Clouds: Are they Galactic or Extragalactic? *S. L. Tufte, J. D. Wilson, G. J. Madsen, L. M. Haffner, & R. J. Reynolds*. 572, L153 (2002)
- WILSON, R. E. Photometric Solutions for Semidetached Eclipsing Binaries: Selection of Distance Indicators in the Small Magellanic Cloud. *J. S. B. Wyithe & R. E. Wilson*. 571, 293 (2002)
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- WINDHORST, R. Westphal-MMD 11: An Interacting Luminous Lyman Break Galaxy. *S. C. Chapman, A. Shapley, C. Steidel, & R. Windhorst*. 572, L1 (2002)
- WINEBARGER, AMY R. Correlating Transition Region Explosive Events With Extreme-Ultraviolet Brightenings. *Amy R. Winebarger, Adria C. Updike, & Katherine K. Reeves*. 570, L105 (2002)
- WINKLER, P. FRANK. The Optical Spectrum of the SN 1006 Supernova Remnant Revisited. *Parviz Ghavamian, P. Frank Winkler, John C. Raymond, & Knox S. Long*. 572, 888 (2002)
- WOLFE, ARTHUR M. The UCSD HRES/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Hewitt, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Rubin, & Nao Suzuki*. 571, 693 (2002)
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- WU, S. T. Evidence of EIT and Moreton Waves in Numerical Simulations. *P. F. Chen, S. T. Wu, K. Shibata, & C. Feng*. 572, L99 (2002)
- WU, XIANG-PING. The Effect of Radiative Cooling on the Scale Dependence of the Global Stellar Gas Content of Groups and Clusters of Galaxies. *Xiang-Ping Wu & Yan-Jie Xue*. 572, L19 (2002)
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- WYITHE, J. S. B. Photometric Solutions for Semidetached Eclipsing Binaries: Selection of Distance Indicators in the Small Magellanic Cloud. *J. S. B. Wyithe & R. E. Wilson*. 571, 293 (2002)
- XU, R. X. A Thermal Featureless Spectrum: Evidence for Bare Strange Stars? *R. X. Xu*. 570, L65 (2002)
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- YAHATA, NORIAKI. The Star Formation Rate Intensity Distribution Function: Implications for the Cosmic Star Formation Rate History of the Universe. *Kenneth A. Lanzetta, Noriaki Yahata, Sebastian Pascarelle, Hsiao-Wen Chen, & Alberto Fernández-Soto*. 570, 492 (2002)
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- YEE, HOWARD K. C. A Measurement of Weak Lensing by Large-Scale Structure in Red-Sequence Cluster Survey Fields. *Henk Hoekstra, Howard K. C. Yee, Michael D. Gladders, L. Felipe Barrientos, Patrick B. Hall, & Leopoldo Infante*. 572, 55 (2002)
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- ZAMANOV, R. Searching for the Physical Drivers of Eigenvector 1: From Quasars to Nanoquasars. *R. Zamanov & P. Marziani*. 571, L77 (2002)
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- ZIURYS, L. M. Heavy-Metal Chemistry in Proto-Planetary Nebulae: Detection of MgNC, NaCN, and AlF toward CRL 2688: Erratum (*ApJ*, 562, 790 [2001]). *J. L. Highberger, C. Savage, J. H. Beiging, & L. M. Ziurys*. 571, 1022 (2002) (Orig. paper in 562, 790 (2001))

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- The Soft Gamma-Ray Spectral Variability of Cygnus X-1. *M. L. McConnell, A. A. Zdziarski, K. Bennett, H. Bloemen, W. Collmar, W. Hermsen, L. Kuiper, W. Paciesas, B. F. Philips, J. Poutanen, J. M. Ryan, V. Schönfelder, H. Steinle, & A. W. Strong*. 572, 984 (2002)
- CATALOGS**
- The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs. *Hsiao-Wen Chen, P. J. McCarthy, R. O. Marzke, J. Wilson, R. G. Carlberg, A. E. Firth, S. E. Persson, C. N. Sabbey, J. R. Lewis, R. G. McMahon, O. Lahav, R. S. Ellis, P. Martini, R. G. Abraham, A. Oemler, D. C. Murphy, R. S. Somerville, M. G. Beckett, & C. D. Mackay*. 570, 54 (2002)
- CELESTIAL MECHANICS**
- Dynamics of a Massive Black Hole at the Center of a Dense Stellar System. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb*. 572, 371 (2002)
- The Dynamical Simulations of the Planets Orbiting GJ 876. *Jianghui Ji, Guangyu Li, & Lin Liu*. 572, 1041 (2002)
- CELESTIAL MECHANICS, STELLAR DYNAMICS**
- Mass Segregation in Globular Clusters. *J. M. Fregeau, K. J. Joshi, S. F. Portegies Zwart, & F. A. Rasio*. 570, 171 (2002)
- COMETS: GENERAL**
- Recurring Outbursts and Nuclear Fragmentation of Comet C/2001 A2 (LINEAR). *Zdenek Sekanina, Emmanuel Jehin, Hermann Boehnhardt, Xavier Bonfils, Oliver Schuetz, & Daniel Thomas*. 572, 679 (2002)
- First Detection of an Optical Dust Trail along the Orbit of 22P/Kopff. *M. Ishiguro, J. Watanabe, F. Usui, T. Tanigawa, D. Kinoshita, J. Suzuki, R. Nakamura, M. Ueno, & T. Mukai*. 572, L117 (2002)
- Revised Fluorescence Efficiencies of Cometary NH<sub>2</sub>: Ammonia Abundance in Comets. *Hideyo Kawakita & Jun-ichi Watanabe*. 572, L177 (2002)
- COMETS: INDIVIDUAL**
- Name: (C/2001 A2)**
- Recurring Outbursts and Nuclear Fragmentation of Comet C/2001 A2 (LINEAR). *Zdenek Sekanina, Emmanuel Jehin, Hermann Boehnhardt, Xavier Bonfils, Oliver Schuetz, & Daniel Thomas*. 572, 679 (2002)
- Name: 21P/Giacobini-Zinner**
- Revised Fluorescence Efficiencies of Cometary NH<sub>2</sub>: Ammonia Abundance in Comets. *Hideyo Kawakita & Jun-ichi Watanabe*. 572, L177 (2002)
- Name: Hale-Bopp 1995 O1**
- Revised Fluorescence Efficiencies of Cometary NH<sub>2</sub>: Ammonia Abundance in Comets. *Hideyo Kawakita & Jun-ichi Watanabe*. 572, L177 (2002)
- Name: Halley**
- Revised Fluorescence Efficiencies of Cometary NH<sub>2</sub>: Ammonia Abundance in Comets. *Hideyo Kawakita & Jun-ichi Watanabe*. 572, L177 (2002)
- Name: Hyakutake (C/1996 B2)**
- Revised Fluorescence Efficiencies of Cometary NH<sub>2</sub>: Ammonia Abundance in Comets. *Hideyo Kawakita & Jun-ichi Watanabe*. 572, L177 (2002)
- CONDUCTION**
- ASCA Observations of the Supernova Remnant IC 443: Thermal Structure and Detection of Overionized Plasma. *Masahiro T. Kawasaki, Masanobu Ozaki, Fumiaki Nagase, Kuniaki Masai, Manabu Ishida, & Robert Petre*. 572, 897 (2002)
- CONVECTION**
- Penetration and Overshooting in Turbulent Compressible Convection. *Nicholas H. Brummell, Thomas L. Clune, & Juri Toomre*. 570, 825 (2002)
- Turbulent Convection under the Influence of Rotation: Sustaining a Strong Differential Rotation. *Allan Sacha Brun & Juri Toomre*. 570, 865 (2002)
- Models of Metal-poor Stars with Gravitational Settling and Radiative Accelerations. II. The Age of the Oldest Stars. *Don A. Vandenberg, O. Richard, G. Michaud, & J. Richer*. 571, 487 (2002)
- From Penetrative Convection to Teleconvection. *Keke Zhang & Gerald Schubert*. 572, 461 (2002)
- Turbulent Time Correlations and Generation of Acoustic Waves by Stellar or Solar Turbulent Convection. *Robert Rubinstein & Ye Zhou*. 572, 674 (2002)
- Evolution of Anomalous Cosmic-Ray Oxygen and Helium Energy Spectra during the Solar Cycle 22 Recovery Phase in the Outer Heliosphere. *M. E. Hill, D. C. Hamilton, & S. M. Krimigis*. 572, L169 (2002)
- COSMOLOGY: COSMIC MICROWAVE BACKGROUND**
- A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background. *C. B. Netterfield, P. A. R. Ade, J. J. Bock, J. R. Bond, J. Borrill, A. Boscaleri, K. Coble, C. R. Contaldi, B. P. Crill, P. de Bernardis, P. Farese, K. Ganga, M. Giacometti, E. Hivon, V. V. Hristov, A. Iacoangeli, A. H. Jaffe, W. C. Jones, A. E. Lange, L. Martinis, S. Masi, P. Mason, P. D. Mauskopf, A. Melchiorri, T. Montroy, E. Pascale, F. Piacentini, D. Pogosyan, F. Pongetti, S. Prunet, G. Romeo, J. E. Ruhl, & F. Scaramuzzi*. 571, 604 (2002)
- Mutual Constraints between Reionization Models and Parameter Extraction from Cosmic Microwave Background Data. *Aparna Venkatesan*. 572, 15 (2002)
- Search for Non-Gaussian Signals in the BOOMERANG Maps: Pixel-Space Analysis. *G. Polenta, P. A. R. Ade, J. J. Bock, J. R. Bond, J. Borrill, A. Boscaleri, C. R. Contaldi, B. P. Crill, P. de Bernardis, G. De Gasperis, G. De Troia, K. Ganga, M. Giacometti, E. Hivon, V. V. Hristov, A. H. Jaffe, A. E. Lange, S. Masi, P. D. Mauskopf, A. Melchiorri, T. Montroy, P. Natoli, C. B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, S. Prunet, G. Romeo, J. E. Ruhl, N. Vittorio, & A. Zeppilli*. 572, L27 (2002)
- COSMOLOGY: COSMOLOGICAL PARAMETERS**
- Constraints in Cosmological Parameter Space from the Sunyaev-Zeldovich Effect and Thermal Bremsstrahlung. *S. M. Molnar, M. Birkinshaw, & R. F. Mushotzky*. 570, 1 (2002)
- Prospects for Determining the Equation of State of the Dark Energy: What Can Be Learned from Multiple Observables? *Jens Kujat, Anjela M. Linn, Robert J. Scherrer, & David H. Weinberg*. 572, 1 (2002)
- Mutual Constraints between Reionization Models and Parameter Extraction from Cosmic Microwave Background Data. *Aparna Venkatesan*. 572, 15 (2002)
- COSMOLOGY: DARK MATTER**
- How Lumpy Is the Milky Way's Dark Matter Halo? *Kathryn V. Johnston, David N. Spergel, & Christian Haydn*. 570, 656 (2002)
- High-Redshift Galaxies in the Cold Dark Matter Models. *David H. Weinberg, Lars Hernquist, & Neal Katz*. 571, 15 (2002)



- Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data. *Idit Zehavi, Michael R. Blanton, Joshua A. Frieman, David H. Weinberg, Houjun J. Mo, Michael A. Strauss, Scott F. Anderson, James Annis, Neta A. Bahcall, Mariangela Bernardi, John W. Briggs, Jon Brinkman, Scott Burles, Larry Carey, Francisco J. Castander, Andrew J. Connolly, Istvan Csabai, Julianne J. Dalcanton, Scott Dodelson, Mamoru Doi, Daniel Eisenstein, Michael L. Evans, Douglas P. Finkbeiner, Scott Friedman, Masataka Fukugita, James E. Gunn, Greg S. Hennessy, Robert B. Hindsley, Željko Ivezić, Stephen Kent, Gillian R. Knapp, Richard Kron, Peter Kunszt, Donald Q. Lamb, R. French Leger, Daniel C. Long, Jon Loveday, Robert H. Lupton, Timothy McKay, Avery Meiksin, Aronne Merrelli, Jeffrey A. Munn, Vijay Narayanan, Matt Newcomb, Robert C. Nichol, Russell Owen, John Peoples, Adrian Pope, Constance M. Rockosi, David Schlegel, Donald P. Scheider, Roman Scoccimarro, Ravi K. Sheth, Walter Siegmund, Stephen Smee, Yehuda Snir, Albert Stebbins, Christopher Stoughton, Mark SubbaRao, Alexander S. Szalay, Istvan Szapudi, Max Tegmark, Douglas L. Tucker, Alan Uomoto, Dan Vanden Berk, Michael S. Vogeley, Patrick Waddell, Brian Yanny, & Donald G. York.* 571, 172 (2002)
- Experimental Constraints on the Axion Dark Matter Halo Density. *S. J. Asztalos, E. Daw, H. Peng, L. J. Rosenberg, D. B. Yu, C. Hagmann, D. Kinion, W. Stoefl, K. van Bibber, J. LaVeigne, P. Sikivie, N. S. Sullivan, D. B. Tanner, F. Nezrick, & D. M. Moltz.* 571, L27 (2002)
- Do Modified Newtonian Dynamics Follow from the Cold Dark Matter Paradigm? *Mordehai Milgrom.* 571, L81 (2002)
- The Validity of the Adiabatic Contraction Approximation for Dark Matter Halos. *Ronald Jessiet, Thorsten Naab, & Andreas Burkert.* 571, L89 (2002)
- Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment. *K. Shinzaki, M. Chikawa, M. Fukushima, N. Hayashida, N. Inoue, K. Honda, K. Kadota, F. Kakimoto, K. Kamata, S. Kawaguchi, S. Kawakami, Y. Kawasaki, N. Kawasumi, A. M. Mahrous, K. Mase, S. Mizobuchi, Y. Morizane, N. Nugano, H. Ohoka, S. Osone, N. Sakaki, N. Sakurai, M. Sasaki, M. Sasano, M. Takeda, M. Teshima, I. Tsumura, R. Torii, Y. Uchihoori, R. A. Vázquez, T. Yamamoto, S. Yoshida, & H. Yoshii.* 571, L117 (2002)
- Direct Detection of Cold Dark Matter Substructure. *N. Dalal & C. S. Kochanek.* 572, 25 (2002)
- Dark Matter Properties and Halo Central Densities. *S. M. Khairul Alam, James S. Bullock, & David H. Weinberg.* 572, 34 (2002)
- Observational Constraints on the Self-interacting Dark Matter Scenario and the Growth of Supermassive Black Holes. *Joseph F. Hennawi & Jeremiah P. Ostriker.* 572, 41 (2002)
- A Measurement of Weak Lensing by Large-Scale Structure in Red-Sequence Cluster Survey Fields. *Henk Hoekstra, Howard K. C. Yee, Michael D. Gladders, L. Felipe Barrientos, Patrick B. Hall, & Leopoldo Infante.* 572, 55 (2002)
- Chandra Observations of the Lensing Cluster EMSS 1358+6245: Implications for Self-interacting Dark Matter. *J. S. Arabadjis, M. W. Bautz, & G. P. Garmire.* 572, 66 (2002)
- Correcting Parameters of Events Based on the Entropy of Microlensing Ensemble. *Piotr Popowski & Charles Alcock.* 572, 514 (2002)
- The Time Delay of the Quadruple Quasar RX J0911.4+0551. *Jens Hjorth, Ingunn Burud, Andreas O. Jaunsen, Paul L. Schechter, Jean-Paul Kneib, Michael I. Andersen, Heidi Korhonen, Jacob W. Clasen, A. Amanda Kaas, Roy Vstensen, Jaan Pelt, & Frank J. Pijpers.* 572, L11 (2002)
- Can Photoionization Squelching Resolve the Substructure Crisis? *Rachel S. Somerville.* 572, L23 (2002)
- The Expected Properties of Dark Lenses. *David Rusin.* 572, 705 (2002)
- Cosmic Shear and Power Spectrum Normalization with the Hubble Space Telescope. *Alexandre Refregier, Jason Rhodes, & Edward J. Groth.* 572, L131 (2002)
- COSMOLOGY: DIFFUSE RADIATION**
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. I. Results. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore.* 571, 56 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. II. Measurement of Foreground Zodiacal Light. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore.* 571, 85 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. III. Cosmological Implications. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore.* 571, 107 (2002)
- A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . V. The Extragalactic Ionizing Background at Low Redshift. *Jennifer Scott, Jill Bechtold, Miwa Morita, Adam Dobrzycki, & Varsha P. Kulkarni.* 571, 665 (2002)
- On the Direct Detectability of the Cosmic Dark Ages: 21 Centimeter Emission from Minihalos. *Ilian T. Iliev, Paul R. Shapiro, Andrea Ferrara, & Hugo Martel.* 572, L123 (2002)
- COSMOLOGY: DISTANCE SCALE**
- Photometric Solutions for Semidetached Eclipsing Binaries: Selection of Distance Indicators in the Small Magellanic Cloud. *J. S. B. Wyithe & R. E. Wilson.* 571, 293 (2002)
- The Time Delay of the Quadruple Quasar RX J0911.4+0551. *Jens Hjorth, Ingunn Burud, Andreas O. Jaunsen, Paul L. Schechter, Jean-Paul Kneib, Michael I. Andersen, Heidi Korhonen, Jacob W. Clasen, A. Amanda Kaas, Roy Vstensen, Jaan Pelt, & Frank J. Pijpers.* 572, L11 (2002)
- COSMOLOGY: EARLY UNIVERSE**
- A Galactic Wind at  $z = 5.190$ . *Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Dey, Wil van Breugel, Win de Vries, & Michiel Reuland.* 570, 92 (2002)
- Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction. *Á. Horváth, J. Weiner, A. Galonsky, F. Dedk, Y. Higurashi, K. Ieki, Y. Iwata, Á. Kiss, J. J. Kolata, Z. Seres, J. von Schwarzenberg, H. Schelin, S. Takeuchi, S. Typel, & R. E. Warner.* 570, 926 (2002)
- COSMOLOGY: GRAVITATIONAL LENSING**
- The Expected Properties of Dark Lenses. *David Rusin.* 572, 705 (2002)
- COSMOLOGY: LARGE-SCALE STRUCTURE OF UNIVERSE**
- The Scale-dependent Energy Transfer Rate as a Tracer for Star Formation in Cosmological N-Body Simulations. *M. Hoeft, J. P. Mücke, & P. Heide.* 570, 33 (2002)
- Two-dimensional Topology of the Two-Degree Field Galaxy Redshift Survey. *Fiona Hoyle, Michael S. Vogeley, & J. Richard Gott III.* 570, 44 (2002)
- Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data. *Istvan Szapudi, Joshua A. Frieman, Roman Scoccimarro, Alexander S. Szalay, Andrew J. Connolly, Scott Dodelson, Daniel J. Eisenstein, James E. Gunn, David Johnston, Stephen Kent, Jon Loveday, Avery Meiksin, Robert C. Nichol, Ryan Scranton, Albert Stebbins, Michael S. Vogeley, James Annis, Neta A. Bahcall, J. Brinkman, Istvan Csabai, Mamoru Doi, Masataka Fukugita, Željko Ivezić, Rita S. J. Kim, Gillian R. Knapp, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Timothy A. McKay, Jeff Munn, John Peoples, Jeff Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 570, 75 (2002)
- Shape Reconstruction and Weak Lensing Measurement with Interferometers: A Shapelet Approach. *Tzu-Ching Chang & Alexandre Refregier.* 570, 447 (2002)
- Evolution of the Ionizing Radiation Background and Star Formation in the Aftermath of Cosmological Reionization. *Renyue Cen & Patrick McDonald.* 570, 457 (2002)
- The Growth of Galaxies in Cosmological Simulations of Structure Formation. *Chigurupati Murali, Neal Katz, Lars Hernquist, David H. Weinberg, & Romeel Davé.* 571, 1 (2002)
- High-Redshift Galaxies in the Cold Dark Matter Models. *David H. Weinberg, Lars Hernquist, & Neal Katz.* 571, 15 (2002)
- The Las Campanas Distant Cluster Survey Correlation Function. *Anthony H. Gonzalez, Dennis Zaritsky, & Risa H. Wechsler.* 571, 129 (2002)
- Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data. *Idit Zehavi, Michael R. Blanton, Joshua A. Frieman, David H. Weinberg, Houjun J. Mo, Michael A. Strauss, Scott F. Anderson, James Annis, Neta A. Bahcall, Mariangela Bernardi, John W. Briggs, Jon Brinkman, Scott Burles, Larry Carey, Francisco J. Castander, Andrew J. Connolly, Istvan Csabai, Julianne J. Dalcanton, Scott Dodelson, Mamoru Doi, Daniel Eisenstein, Michael L. Evans, Douglas P. Finkbeiner, Scott Friedman, Masataka Fukugita, James E. Gunn, Greg S. Hennessy, Robert B. Hindsley, Željko Ivezić, Stephen Kent, Gillian R. Knapp, Richard Kron, Peter Kunszt, Donald Q. Lamb, R. French Leger, Daniel C. Long, Jon Loveday, Robert H. Lupton, Timothy McKay, Avery Meiksin, Aronne Merrelli, Jeffrey A. Munn, Vijay Narayanan, Matt Newcomb, Robert C. Nichol, Russell Owen, John Peoples, Adrian Pope, Constance M. Rockosi, David Schlegel, Donald P. Scheider, Roman Scoccimarro, Ravi K. Sheth, Walter Siegmund, Stephen Smee, Yehuda Snir, Albert Stebbins, Christopher Stoughton, Mark SubbaRao, Alexander S. Szalay, Istvan Szapudi, Max Tegmark, Douglas L. Tucker, Alan Uomoto, Dan Vanden*

- Berk, Michael S. Vogeley, Patrick Waddell, Brian Yanny, & Donald G. York. 571, 172 (2002)
- The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data. Max Tegmark, Scott Dodelson, Daniel J. Eisenstein, Vijay Narayanan, Roman Scoccimarro, Ryan Scranton, Michael A. Strauss, Andrew Connolly, Joshua A. Frieman, James E. Gunn, Lam Hui, Bhuvnesh Jain, David Johnston, Stephen Kent, Jon Loveday, Robert C. Nichol, Liam O'Connell, Ravi K. Sheth, Albert Stebbins, Alexander S. Szalay, István Szapudi, Michael S. Vogeley, Idit Zehavi, James Annis, Neta A. Bahcall, J. Brinkmann, István Csabai, Mamoru Doi, Masataka Fukugita, Greg Hennessy, Željko Ivezić, Gillian R. Knapp, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Timothy A. McKay, Peter Kunszt, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Michael Richmond, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York. 571, 191 (2002)
- Constrained Simulations of the Real Universe. II. Observational Signatures of Intergalactic Gas in the Local Supercluster Region. Andrey V. Kravtsov, Anatoly Klypin, & Yehuda Hoffman. 571, 563 (2002)
- Statistical Mechanics of the Cosmological Many-Body Problem. Farooq Ahmad, William C. Saslaw, & Naseer Iqbal Bhat. 571, 576 (2002)
- An Analytical Approach to Inhomogeneous Structure Formation. Evan Scannapieco & Rennan Barkana. 571, 585 (2002)
- Lognormal Property of Weak-Lensing Fields. Atsushi Taruya, Masahiro Takada, Takashi Hamana, Issha Kayo, & Toshifumi Futamase. 571, 638 (2002)
- A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . IV. The Clustering and Evolution of Clouds at  $z \leq 1.7$ . Adam Dobrzycki, Jill Bechtold, Jennifer Scott, & Miwa Morita. 571, 654 (2002)
- Direct Detection of Cold Dark Matter Substructure. N. Dalal & C. S. Kochanek. 572, 25 (2002)
- Recent Dynamical Evolution of Galaxy Clusters. M. Plionis. 572, L67 (2002)
- On the Direct Detectability of the Cosmic Dark Ages: 21 Centimeter Emission from Minihalos. Ilian T. Iliev, Paul R. Shapiro, Andrea Ferrara, & Hugo Martel. 572, L123 (2002)
- Chandra Detection of O VIII Ly $\alpha$  Absorption from an Overdense Region in the Intergalactic Medium. Taotao Fang, Herman L. Marshall, Julia C. Lee, David S. Davis, & Claude R. Canizares. 572, L127 (2002)
- Cosmic Shear and Power Spectrum Normalization with the Hubble Space Telescope. Alexandre Refregier, Jason Rhodes, & Edward J. Groth. 572, L131 (2002)
- ### COSMOLOGY: OBSERVATIONS
- Two-dimensional Topology of the Two-Degree Field Galaxy Redshift Survey. Fiona Hoyle, Michael S. Vogeley, & J. Richard Gott III. 570, 44 (2002)
- The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs. Hsiao-Wen Chen, P. J. McCarthy, R. O. Marzke, J. Wilson, R. G. Carlberg, A. E. Firth, S. E. Persson, C. N. Sabbey, J. R. Lewis, R. G. McMahon, O. Lahav, R. S. Ellis, P. Martini, R. G. Abraham, A. Oemler, D. C. Murphy, R. S. Somerville, M. G. Beckett, & C. D. Mackay. 570, 54 (2002)
- A Galactic Wind at  $z = 5.190$ . Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Dey, Wil van Breugel, Win de Vries, & Michiel Reuland. 570, 92 (2002)
- The BeppoSAX High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution. F. La Franca, F. Fiore, C. Vignali, A. Antonelli, A. Comastri, P. Giommi, G. Matt, S. Molendi, G. C. Perola, & F. Pomplio. 570, 100 (2002)
- A Bridge from Optical to Infrared Galaxies: Explaining Local Properties and Predicting Galaxy Counts and the Cosmic Background Radiation. Tomonori Totani & Tsutomu T. Takeuchi. 570, 470 (2002)
- The Star Formation Rate Intensity Distribution Function: Implications for the Cosmic Star Formation Rate History of the Universe. Kenneth A. Lanzetta, Noriaki Yahata, Sebastian Pascarelle, Hsiao-Wen Chen, & Alberto Fernández-Soto. 570, 492 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. I. Results. Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore. 571, 56 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. II. Measurement of Foreground Zodiacal Light. Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore. 571, 85 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. III. Cosmological Implications. Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore. 571, 107 (2002)
- The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ . Myungshin Im, Luc Simard, S. M. Faber, David C. Koo, Karl Gebhardt, Christopher N. A. Willmer, Andrew Phillips, Garth Illingworth, Nicole P. Vogt, & Vicki L. Sarajedini. 571, 136 (2002)
- Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data. Idit Zehavi, Michael R. Blanton, Joshua A. Frieman, David H. Weinberg, Hoon J. Mo, Michael A. Strauss, Scott F. Anderson, James Annis, Neta A. Bahcall, Mariangela Bernardi, John W. Briggs, Jon Brinkman, Scott Burles, Larry Carey, Francisco J. Castander, Andrew J. Connolly, István Csabai, Julianne J. Dalcanton, Scott Dodelson, Mamoru Doi, Daniel Eisenstein, Michael L. Evans, Douglas P. Finkbeiner, Scott Friedman, Masataka Fukugita, James E. Gunn, Greg S. Hennessy, Robert B. Hindsley, Željko Ivezić, Stephen Kent, Gillian R. Knapp, Richard Kron, Peter Kunszt, Donald Q. Lamb, R. French Leger, Daniel C. Long, Jon Loveday, Robert H. Lupton, Timothy McKay, Avery Meiksin, Aronne Merrelli, Jeffrey A. Munn, Vijay Narayanan, Matt Newcomb, Robert C. Nichol, Russell Owen, John Peoples, Adrian Pope, Constance M. Rockosi, David Schlegel, Donald P. Scheider, Roman Scoccimarro, Ravi K. Sheth, Walter Siegmund, Stephen Smei, Yehuda Snir, Albert Stebbins, Christopher Stoughton, Mark SubbaRao, Alexander S. Szalay, István Szapudi, Max Tegmark, Douglas L. Tucker, Alan Uomoto, Dan Vanden Berk, Michael S. Vogeley, Patrick Waddell, Brian Yanny, & Donald G. York. 571, 172 (2002)
- A Measurement by BOOMERANG of Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background. C. B. Netterfield, P. A. R. Ade, J. J. Bock, J. R. Bond, J. Borrill, A. Boscaleri, K. Coble, C. R. Contaldi, B. P. Crill, P. de Bernardis, P. Farese, K. Ganga, M. Giacometti, E. Hivon, V. V. Hristov, A. Iacoangeli, A. H. Jaffe, W. C. Jones, A. E. Lange, L. Martinis, S. Masi, P. Mason, P. D. Mauskopf, A. Melchiorri, T. Montroy, E. Pascale, F. Piacentini, D. Pogosyan, F. Pongetti, S. Prunet, G. Romeo, J. E. Ruhl, & F. Scaramuzzi. 571, 604 (2002)
- Will Jets Identify the Progenitors of Type Ia Supernovae? Mario Livio, Adam Riess, & William Sparks. 571, L99 (2002)
- Hydrogen Column Density Evaluations toward Capella: Consequences on the Interstellar Deuterium Abundance. A. Vidal-Madjar & R. Ferlet. 571, L169 (2002)
- Dark Matter Properties and Halo Central Densities. S. M. Khairul Alam, James S. Bullock, & David H. Weinberg. 572, 34 (2002)
- A Measurement of Weak Lensing by Large-Scale Structure in Red-Sequence Cluster Survey Fields. Henk Hoekstra, Howard K. C. Yee, Michael D. Gladders, L. Felipe Barrientos, Patrick B. Hall, & Leopoldo Infante. 572, 55 (2002)
- Westphal-MMD 11: An Interacting Luminous Lyman Break Galaxy. S. C. Chapman, A. Shapley, C. Steidel, & R. Windhorst. 572, L1 (2002)
- The Time Delay of the Quadruple Quasar RX J0911.4+0551. Jens Hjorth, Ingunn Burud, Andreas O. Jaunsen, Paul L. Schecter, Jean-Paul Kneib, Michael I. Andersen, Heidi Kornhonen, Jacob W. Clasen, A. Amanda Kaas, Roy Vstensen, Jan Pelt, & Frank J. Pijpers. 572, L11 (2002)
- A Universal Probability Distribution Function for Weak-lensing Amplification. Yun Wang, Daniel E. Holz, & Dipak Munshi. 572, L15 (2002)
- ### COSMOLOGY: THEORY
- Constraints in Cosmological Parameter Space from the Sunyaev-Zeldovich Effect and Thermal Bremsstrahlung. S. M. Mohar, M. Birkinshaw, & R. F. Mushotzky. 570, 1 (2002)
- Light Propagation in Inhomogeneous Universes. III. Distributions of Image Separations. Hugo Martel, Premana Premadi, & Richard Matzner. 570, 17 (2002)
- Structure, Evolution, and Nucleosynthesis of Primordial Stars. Lionel Siess, Mario Livio, & John Lattanzio. 570, 329 (2002)
- Evolution of the Ionizing Radiation Background and Star Formation in the Aftermath of Cosmological Reionization. Renyue Cen & Patrick McDonald. 570, 457 (2002)
- Testing Theories That Predict Time Variation of Fundamental Constants. Susana J. Landau & Hector Vucetich. 570, 463 (2002)
- The Growth of Galaxies in Cosmological Simulations of Structure Formation. Chigurupati Murali, Neal Katz, Lars Hernquist, David H. Weinberg, & Romeel Davé. 571, 1 (2002)
- First Stars, Very Massive Black Holes, and Metals. R. Schneider, A. Ferrara, P. Natarajan, & K. Omukai. 571, 30 (2002)
- Early Metal Enrichment by Pregalactic Outflows. II. Three-dimensional Simulations of Blow-Away. Masao Mori, Andrea Ferrara, & Piero Madau. 571, 40 (2002)

- Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data. *Idit Zehavi, Michael R. Blanton, Joshua A. Frieman, David H. Weinberg, Houjun J. Mo, Michael A. Strauss, Scott F. Anderson, James Annis, Neta A. Bahcall, Mariangela Bernardi, John W. Briggs, Jon Brinkman, Scott Burles, Larry Carey, Francisco J. Castander, Andrew J. Connolly, Istvan Csabai, Julianne J. Dalcanton, Scott Dodelson, Mamoru Doi, Daniel Eisenstein, Michael L. Evans, Douglas P. Finkbeiner, Scott Friedman, Masataka Fukugita, James E. Gunn, Greg S. Hennessy, Robert B. Hindsley, Željko Ivezić, Stephen Kent, Gillian R. Knapp, Richard Kron, Peter Kunszt, Donald Q. Lamb, R. French Leger, Daniel C. Long, Jon Loveday, Robert H. Lupton, Timothy McKay, Avery Meiksin, Aronne Merrelli, Jeffrey A. Munn, Vijay Narayanan, Matt Newcomb, Robert C. Nichol, Russell Owen, John Peoples, Adrian Pope, Constance M. Rockosi, David Schlegel, Donald P. Scheider, Roman Scoccimarro, Ravi K. Sheth, Walter Siegmund, Stephen Smee, Yehuda Snir, Albert Stebbins, Christopher Stoughton, Mark SubbaRao, Alexander S. Szalay, Istvan Szapudi, Max Tegmark, Douglas L. Tucker, Alan Uomoto, Dan Vanden Berk, Michael S. Vogele, Patrick Waddell, Brian Yanny, & Donald G. York.* 571, 172 (2002)
- Constrained Simulations of the Real Universe. II. Observational Signatures of Intergalactic Gas in the Local Supercluster Region. *Andrey V. Kravtsov, Anatoly Klypin, & Yehuda Hoffman.* 571, 563 (2002)
- Statistical Mechanics of the Cosmological Many-Body Problem. *Farooq Ahmad, William C. Saslaw, & Naseer Iqbal Bhat.* 571, 576 (2002)
- An Analytical Approach to Inhomogeneous Structure Formation. *Evan Scannapieco & Rennan Barkana.* 571, 585 (2002)
- Lognormal Property of Weak-Lensing Fields. *Atsushi Taruya, Masahiro Takada, Takashi Hamana, Issha Kayo, & Toshifumi Futamase.* 571, 638 (2002)
- Prospects for Determining the Equation of State of the Dark Energy: What Can Be Learned from Multiple Observables? *Jens Kujat, Anjela M. Linn, Robert J. Scherrer, & David H. Weinberg.* 572, 1 (2002)
- Mutual Constraints between Reionization Models and Parameter Extraction from Cosmic Microwave Background Data. *Aparna Venkatesan.* 572, 15 (2002)
- Direct Detection of Cold Dark Matter Substructure. *N. Dalal & C. S. Kochanek.* 572, 25 (2002)
- Dark Matter Properties and Halo Central Densities. *S. M. Khairul Alam, James S. Bullock, & David H. Weinberg.* 572, 34 (2002)
- Observational Constraints on the Self-interacting Dark Matter Scenario and the Growth of Supermassive Black Holes. *Joseph F. Hennawi & Jeremiah P. Ostriker.* 572, 41 (2002)
- A Universal Probability Distribution Function for Weak-lensing Amplification. *Yun Wang, Daniel E. Holz, & Dipak Munshi.* 572, L15 (2002)
- The Effect of Radiative Cooling on the Scale Dependence of the Global Stellar Gas Content of Groups and Clusters of Galaxies. *Xiang-Ping Wu & Yan-Jie Xue.* 572, L19 (2002)
- On the Direct Detectability of the Cosmic Dark Ages: 21 Centimeter Emission from Minihalos. *Ilian T. Iliev, Paul R. Shapiro, Andrea Ferrara, & Hugo Martel.* 572, L123 (2002)
- DENSE MATTER**
- A Thermal Featureless Spectrum: Evidence for Bare Strange Stars? *R. X. Xu.* 570, L65 (2002)
- Confronting Neutron Star Cooling Theories with New Observations. *S. Tsuruta, M. A. Teter, T. Takatsuka, T. Tatsumi, & R. Tamagaki.* 571, L143 (2002)
- DIFFUSION**
- The Effect of the Hall Term on the Nonlinear Evolution of the Magnetorotational Instability. I. Local Axisymmetric Simulations. *Takayoshi Sano & James M. Stone.* 570, 314 (2002)
- Activity in Very Cool Stars: Magnetic Dissipation in Late M and L Dwarf Atmospheres. *Subhanjoy Mohanty, Glibor Basri, Frank Shu, France Allard, & Gilles Chabrier.* 571, 469 (2002)
- Models of Metal-poor Stars with Gravitational Settling and Radiative Accelerations. II. The Age of the Oldest Stars. *Don A. Vandenberg, O. Richard, G. Michaud, & J. Richer.* 571, 487 (2002)
- Ultraviolet C I Lines in the HgMn Star  $\chi$  Lupi. *Charles R. Proffitt.* 571, 955 (2002)
- Energy Balance in the Solar Transition Region. IV. Hydrogen and Helium Mass Flows with Diffusion. *J. M. Fontenla, E. H. Avrett, & R. Loeser.* 572, 636 (2002)
- Evolution of Anomalous Cosmic-Ray Oxygen and Helium Energy Spectra during the Solar Cycle 22 Recovery Phase in the Outer Heliosphere. *M. E. Hill, D. C. Hamilton, & S. M. Krimigis.* 572, L169 (2002)
- ELEMENTARY PARTICLES**
- Discovering Ultra-High-Energy Neutrinos through Horizontal and Upward  $\tau$  Air Showers: Evidence in Terrestrial Gamma Flashes? *D. Fargion.* 570, 909 (2002)
- A Thermal Featureless Spectrum: Evidence for Bare Strange Stars? *R. X. Xu.* 570, L65 (2002)
- Emission of Positron Annihilation Line Radiation by Clusters of Galaxies. *Steven R. Furlanetto & Abraham Loeb.* 572, 796 (2002)
- EQUATION OF STATE**
- Three-dimensional Simulations of the Gravitational Collapse of Logotropic Molecular Cloud Cores. *Michael A. Reid, Ralph E. Pudritz, & James Wadsley.* 570, 231 (2002)
- ERRATA, ADDENDA**
- Survey Observations of c-C<sub>2</sub>H<sub>4</sub>O and CH<sub>3</sub>CHO toward Massive Star-forming Regions: Erratum (ApJ, 560, 792 [2001]). *M. Ikeda, M. Ohishi, A. Nummelin, J. E. Dickens, P. Bergman, Å. Hjalmarson, & W. M. Irvine.* 571, 560 (2002) (Orig. paper in 560, 792 (2001))
- Hubble Space Telescope Observations of 10 Two-Image Gravitational Lenses: Erratum (ApJ, 536, 584 [2002]). *J. Lehar, E. E. Falco, C. S. Kochanek, B. A. McLeod, J. A. Muñoz, C. D. Impey, H.-W. Rix, C. R. Keeton, & D. C. Y. Peng.* 571, 1021 (2002) (Orig. paper in 536, 584 (2000))
- Heavy-Metal Chemistry in Proto-Planetary Nebulae: Detection of MgNC, NaCN, and AlF toward CRL 2688: Erratum (ApJ, 562, 790 [2001]). *J. L. Highberger, C. Savage, J. H. Beiging, & L. M. Ziurys.* 571, 1022 (2002) (Orig. paper in 562, 790 (2001))
- Discovery of Radio-loud Broad Absorption Line Quasars Using Ultraviolet Excess and Deep Radio Selection: Erratum (ApJ, 505, L17 [1998]). *M. S. Brotherton, W. van Breugel, R. J. Smith, B. J. Boyle, T. Shanks, S. M. Croom, L. Miller, & R. H. Becker.* 571, L191 (2002)
- Understanding the nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43: Erratum (ApJ, 570, L33 [2002]). *Teresa Giannini, Brunella Nisini, Alessio Caratti, & Dario Lorenzetti.* 571, L195 (2002)
- EG J2016+3657: Confirming an EGRET Blazar behind the Galactic Plane: Erratum (ApJ, 551, 1016 [2001]). *J. P. Halpern, M. Eracleous, R. Mukherjee, & E. V. Gotthelf.* 572, 693 (2002) (Orig. paper in 551, 1016 (2001))
- How Mira Variables Change Visual Light by a Thousandfold: Erratum (ApJ, 568, 931 [2002]). *M. J. Reid & J. E. Goldston.* 572, 694 (2002) (Orig. paper in 568, 931 (2002))
- Evidence for an Outer Disk in the Prototype "Compact Elliptical" Galaxy M32: Erratum (ApJ, 568, L13 (2002)). *Alister W. Graham.* 572, L121 (2002)
- The Star Formation History of the Large Magellanic Cloud: Erratum (ApJ, 566, 239 [2002]). *Tammy A. Smecker-Hane, Andrew A. Cole, John S. Gallagher III, & Peter B. Stetson.* 572, 1083 (2002) (Orig. paper in 566, 239 (2002))
- GALAXIES: ABUNDANCES**
- The UCSD HIRES/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Howk, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Lubin, & Nao Suzuki.* 571, 693 (2002)
- History of Milky Way Dwarf Spheroidal Galaxies Imprinted on Abundance Patterns of Neutron-Capture Elements. *Takaji Tsujimoto & Toshikazu Shigejima.* 571, L93 (2002)
- Hydrogen Column Density Evaluations toward Capella: Consequences on the Interstellar Deuterium Abundance. *A. Vidal-Madjar & R. Ferlet.* 571, L169 (2002)
- Abundance Gradients and the Role of Supernovae in M87. *Fabio Gastaldello & Silvano Molendo.* 572, 160 (2002)
- Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Ote, J. S. Gallagher III, & R. J. Reynolds.* 572, 823 (2002)
- Optical Spectroscopy of Metal-rich H II Regions and Circumstellar Hot Spots in M83 and NGC 3351. *Fabio Bresolin & Robert C. Kennicutt, Jr.* 572, 838 (2002)



# **GALAXIES: ACTIVE**

- The *BeppoSAX* High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution. *F. La Franca, F. Fiore, C. Vignali, A. Antonelli, A. Comastri, P. Giommi, G. Matt, S. Molendi, G. C. Perola, & F. Pompilio.* 570, 100 (2002)
- Supermassive Black Holes in Galactic Nuclei. *A. Cavaliere & V. Vittorini.* 570, 114 (2002)
- Inner-Shell 1s–2p Soft X-Ray Absorption Lines. *Ehud Behar & Hagai Netzer.* 570, 165 (2002)
- Chandra* Detection of Highest Redshift ( $z \sim 6$ ) Quasars in X-Rays. *Smita Mathur, Belinda J. Wilkes, & Himel Ghosh.* 570, L5 (2002)
- Dust Emission from Active Galactic Nuclei. *Maia Nenkova, Željko Ivezić, & Moshe Elitzur.* 570, L9 (2002)
- Evidence for the Evolutionary Sequence of Blazars: Different Types of Accretion Flows in BL Lacertae Objects. *Xinwu Cao.* 570, L13 (2002)
- Keck Absorption-Line Spectroscopy of Galactic Winds in Ultraluminous Infrared Galaxies. *David S. Rupke, Sylvain Veilleux, & D. B. Sanders.* 570, 588 (2002)
- The Shape of the Relativistic Iron  $K\alpha$  Line from MCG –6-30-15 Measured with the *Chandra* High Energy Transmission Grating Spectrometer and the *Ross X-Ray Timing Explorer*. *Julia C. Lee, Kazushi Iwasawa, John C. Houck, Andrew C. Fabian, Herman L. Marshall, & Claude R. Canizares.* 570, L47 (2002)
- Ubiquitous Variability of X-Ray-absorbing Column Densities in Seyfert 2 Galaxies. *G. Risaliti, M. Elvis, & F. Nicastro.* 571, 234 (2002)
- The Nuclei of Radio Galaxies in the Ultraviolet: The Signature of Different Emission Processes. *Marco Chiaberge, F. Duccio Macchetto, William B. Sparks, Alessandro Capetti, Mark G. Allen, & André R. Martel.* 571, 247 (2002)
- The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra.* 571, 256 (2002)
- The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516. *I. M. George, T. J. Turner, H. Netzer, S. B. Kraemer, J. Ruiz, D. Chelouche, D. M. Crenshaw, T. Yaqoob, K. Nandra, & R. F. Mushotzky.* 571, 265 (2002)
- The Relation Between Mid-Infrared Emission and Black Hole Mass in Active Galactic Nuclei: A Direct Way to Probe Black Hole Growth? *Almudena Alonso-Herrero, Valentin D. Ivanov, Ray Jayawardhana, & Takashi Hosokawa.* 571, L1 (2002)
- Subarcsecond Emission in Seyfert Galaxies: The Nuclear Component in the L and M Bands. *M. A. Prieto, J. Reunanen, & J. K. Kotilainen.* 571, L7 (2002)
- The Effect of Mixing on Metallicity Gradients in the Intracluster Medium. *M. Brüggen.* 571, L13 (2002)
- Determining Central Black Hole Masses in Distant Active Galaxies. *M. Vestergaard.* 571, 733 (2002)
- The *HELLAS2 XMM* Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy. *A. Comastri, M. Mignoli, P. Cilieg, P. Severgnini, R. Maiolino, M. Brusa, F. Fiore, A. Baldi, S. Molendi, R. Morganti, C. Vignali, F. La Franca, G. Matt, & G. C. Perola.* 571, 771 (2002)
- The Spectrum and Variability of Circular Polarization in Sagittarius A from 1.4 to 15 GHz. *Geoffrey C. Bower, Heino Falcke, Robert J. Sault, & Donald C. Backer.* 571, 843 (2002)
- An X-Ray Reprocessing Model of Disk Thermal Emission in Type I Seyfert Galaxies. *James Chiang.* 572, 79 (2002)
- The Far-Infrared Energy Distributions of Seyfert and Starburst Galaxies in the Local Universe: *Infrared Space Observatory* Photometry of the 12 Micron Active Galaxy Sample. *Luigi Spinoglio, Paola Andreani, & Matthew A. Malkan.* 572, 105 (2002)
- The Interpretation of the Emission Spectra of the Seyfert 2 Galaxy NGC 7130: Determination of the Active Galactic Nucleus and Starburst Contributions. *M. Contini, M. Radovich, P. Rafanelli, & G. M. Richter.* 572, 124 (2002)
- The Mass of the Central Black Hole in the Seyfert Galaxy NGC 3783. *Christopher A. Onken & Bradley M. Peterson.* 572, 746 (2002)
- Are the Narrow-Line Regions in Active Galaxies Dusty and Radiation Pressure Dominated? *Michael A. Dopita, Brent A. Groves, Ralph S. Sutherland, Luc Binette, & Gerald Cecil.* 572, 753 (2002)
- Four Years of Monitoring Blazar PKS 2155–304 with *BeppoSAX*: Probing the Dynamics of the Jet. *Y. H. Zhang, A. Treves, A. Celotti, L. Chiappetti, G. Fossati, G. Ghisellini, L. Maraschi, E. Pian, G. Tagliaferri, & F. Tavecchio.* 572, 762 (2002)

Microarcsecond Radio Imaging Using Earth-Orbit Synthesis. *Jean-Pierre Macquart & David L. Jauncey.* 572, 786 (2002)

# **GALAXIES: BL LACERTAE OBJECTS: GENERAL**

- Evidence for the Evolutionary Sequence of Blazars: Different Types of Accretion Flows in BL Lacertae Objects. *Xinwu Cao.* 570, L13 (2002)
- The Blazar Main Sequence. *A. Cavaliere & V. D'Elia.* 571, 226 (2002)
- Four Years of Monitoring Blazar PKS 2155–304 with *BeppoSAX*: Probing the Dynamics of the Jet. *Y. H. Zhang, A. Treves, A. Celotti, L. Chiappetti, G. Fossati, G. Ghisellini, L. Maraschi, E. Pian, G. Tagliaferri, & F. Tavecchio.* 572, 762 (2002)

# **GALAXIES: BL LACERTAE OBJECTS: INDIVIDUAL**

## **Alphanumeric: PKS 2155–304**

- Four Years of Monitoring Blazar PKS 2155–304 with *BeppoSAX*: Probing the Dynamics of the Jet. *Y. H. Zhang, A. Treves, A. Celotti, L. Chiappetti, G. Fossati, G. Ghisellini, L. Maraschi, E. Pian, G. Tagliaferri, & F. Tavecchio.* 572, 762 (2002)
- Chandra* Detection of O VIII Ly $\alpha$  Absorption from an Overdense Region in the Intergalactic Medium. *Taotao Fang, Herman L. Marshall, Julia C. Lee, David S. Davis, & Claude R. Canizares.* 572, L127 (2002)

# **GALAXIES: CLUSTERS: GENERAL**

- Constraints in Cosmological Parameter Space from the Sunyaev-Zeldovich Effect and Thermal Bremsstrahlung. *S. M. Molnar, M. Birkinshaw, & R. F. Mushotzky.* 570, 1 (2002)
- Higher Order Moments of the Angular Distribution of Galaxies from Early Sloan Digital Sky Survey Data. *István Szapudi, Joshua A. Frieman, Roman Scoccimarro, Alexander S. Szalay, Andrew J. Connolly, Scott Dodelson, Daniel J. Eisenstein, James E. Gunn, David Johnston, Stephen Kent, Jon Loveday, Avery Meiksin, Robert C. Nichol, Ryan Scranton, Albert Stebbins, Michael S. Vogeley, James Annis, Neta A. Bahcall, J. Brinkman, István Csabai, Mamoru Doi, Masataka Fukugita, Željko Ivezić, Rita S. J. Kim, Gillian R. Knapp, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Timothy A. McKay, Jeff Munn, John Peoples, Jeff Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 570, 75 (2002)
- The Las Campanas Distant Cluster Survey Correlation Function. *Anthony H. Gonzalez, Dennis Zaritsky, & Risa H. Wechsler.* 571, 129 (2002)
- Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data. *Idit Zehavi, Michael R. Blanton, Joshua A. Frieman, David H. Weinberg, Houjun J. Mo, Michael A. Strauss, Scott F. Anderson, James Annis, Neta A. Bahcall, Mariangela Bernardi, John W. Briggs, Jon Brinkman, Scott Burles, Larry Carey, Francisco J. Castander, Andrew J. Connolly, István Csabai, Julianne J. Dalcanton, Scott Dodelson, Mamoru Doi, Daniel Eisenstein, Michael L. Evans, Douglas P. Finkbeiner, Scott Friedman, Masataka Fukugita, James E. Gunn, Greg S. Hennessy, Robert B. Hindsley, Željko Ivezić, Stephen Kent, Gillian R. Knapp, Richard Kron, Peter Kunszt, Donald Q. Lamb, R. French Leger, Daniel C. Long, Jon Loveday, Robert H. Lupton, Timothy McKay, Avery Meiksin, Aronne Merrelli, Jeffrey A. Munn, Vijay Narayanan, Matt Newcomb, Robert C. Nichol, Russell Owen, John Peoples, Adrian Pope, Constance M. Rockosi, David Schlegel, Donald P. Scheider, Roman Scoccimarro, Ravi K. Sheth, Walter Siegmund, Stephen Smee, Yehuda Snir, Albert Stebbins, Christopher Stoughton, Mark SubbaRao, Alexander S. Szalay, István Szapudi, Max Tegmark, Douglas L. Tucker, Alan Uomoto, Dan Vanden Berk, Michael S. Vogeley, Patrick Waddell, Brian Yanny, & Donald G. York.* 571, 172 (2002)
- The Effect of Mixing on Metallicity Gradients in the Intracluster Medium. *M. Brüggen.* 571, L13 (2002)
- Statistical Mechanics of the Cosmological Many-Body Problem. *Farooq Ahmad, William C. Saslaw, & Naseer Iqbal Bhat.* 571, 576 (2002)
- The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data. *Scott Dodelson, Vijay K. Narayanan, Max Tegmark, Ryan Scranton, Tamas Budavári, Andrew Connolly, István Csabai, Daniel Eisenstein, Joshua A. Frieman, James E. Gunn, Lam Hui, Bhuvnesh Jain, David Johnston, Stephen Kent, Jon Loveday, Robert C. Nichol, Liam O'Connell, Roman Scoccimarro, Ravi K. Sheth, Albert Stebbins, Michael A. Strauss, Alexander S. Szalay, István Szapudi, Michael S. Vogeley, Idit Zehavi, James Annis, Neta A. Bahcall, Jon Brinkman, Mamoru Doi, Masataka Fukugita, Greg Hennessy, Željko Ivezić, Gillian R. Knapp, Peter Kunszt, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 572, 140 (2002)



- Abundance Gradients and the Role of Supernovae in M87. *Fabio Gastaldello & Silvano Molendo*. 572, 160 (2002)
- The Effect of Radiative Cooling on the Scale Dependence of the Global Stellar Gas Content of Groups and Clusters of Galaxies. *Xiang-Ping Wu & Yan-Jie Xue*. 572, L19 (2002)
- Recent Dynamical Evolution of Galaxy Clusters. *M. Plionis*. 572, L67 (2002)
- Emission of Positron Annihilation Line Radiation by Clusters of Galaxies. *Steven R. Furlanetto & Abraham Loeb*. 572, 796 (2002)
- GALAXIES: CLUSTERS: INDIVIDUAL**
- Name: Virgo**
- Intracuster Red Giant Stars in the Virgo Cluster. *Patrick R. Durrell, Robin Ciardullo, John J. Feldmeier, George H. Jacoby, & Steinn Sigurdsson*. 570, 119 (2002)
- Alphanumeric: EMSS 1358+6245**
- Chandra* Observations of the Lensing Cluster EMSS 1358+6245: Implications for Self-interacting Dark Matter. *J. S. Arabadjis, M. W. Bautz, & G. P. Garmire*. 572, 66 (2002)
- GALAXIES: COOLING FLOWS**
- The Effect of Mixing on Metallicity Gradients in the Intracuster Medium. *M. Brüggén*. 571, L13 (2002)
- GALAXIES: DISTANCES AND REDSHIFTS**
- Two-dimensional Topology of the Two-Degree Field Galaxy Redshift Survey. *Fiona Hoyle, Michael S. Vogeley, & J. Richard Gott III*. 570, 44 (2002)
- The BeppoSAX High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution. *F. La Franca, F. Fiore, C. Vignali, A. Antonelli, A. Comastri, P. Giommi, G. Matt, S. Molendi, G. C. Perola, & F. Pompilio*. 570, 100 (2002)
- Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data. *Idit Zehavi, Michael R. Blanton, Joshua A. Frieman, David H. Weinberg, Houjun J. Mo, Michael A. Strauss, Scott F. Anderson, James Annis, Neta A. Bahcall, Mariangela Bernardi, John W. Briggs, Jon Brinkman, Scott Burles, Larry Corey, Francisco J. Castander, Andrew J. Connolly, Istvan Csabai, Julianne J. Dalcanton, Scott Dodelson, Mamoru Doi, Daniel Eisenstein, Michael L. Evans, Douglas P. Finkbeiner, Scott Friedman, Masataka Fukugita, James E. Gunn, Greg S. Hennessy, Robert B. Hindsley, Željko Ivezić, Stephen Kent, Gillian R. Knapp, Richard Kron, Peter Kunszt, Donald Q. Lamb, R. French Leger, Daniel C. Long, Jon Loveday, Robert H. Lupton, Timothy McKay, Avery Meiksin, Aronne Merrelli, Jeffrey A. Munn, Vijay Narayanan, Matt Newcomb, Robert C. Nichol, Russell Owen, John Peoples, Adrian Pope, Constance M. Rockosi, David Schlegel, Donald P. Scheider, Roman Scoccimarro, Ravi K. Sheth, Walter Siegmund, Stephen Smee, Yehuda Snir, Albert Stebbins, Christopher Stoughton, Mark SubbaRao, Alexander S. Szalay, Istvan Szapudi, Max Tegmark, Douglas L. Tucker, Alan Uomoto, Dan Vanden Berk, Michael S. Vogeley, Patrick Waddell, Brian Yanny, & Donald G. York*. 571, 172 (2002)
- Arguments for a Hubble Constant near  $H_0 = 55$ . *H. Arp*. 571, 615 (2002)
- GALAXIES: DWARF**
- ROSAT X-Ray Observations of the Dwarf Galaxy Holmberg II. *Jürgen Kerp, Fabian Walter, & Elias Brinks*. 571, 809 (2002)
- Can Photoionization Squelching Resolve the Substructure Crisis? *Rachel S. Somerville*. 572, L23 (2002)
- GALAXIES: ELLIPTICAL AND LENTICULAR, CD**
- The Shapes of Galaxies in the Sloan Digital Sky Survey. *S. M. Khairul Alam & Barbara S. Ryden*. 570, 610 (2002)
- Mid-Infrared Observation of Mass Loss in Elliptical Galaxies. *Alex Athey, Joel Bregman, Jesse Bregman, Pasquale Temi, & Marc Sauvage*. 571, 272 (2002)
- X-Ray Binaries and Globular Clusters in Elliptical Galaxies. *Raymond E. White III, Craig L. Sarazin, & Shrinivas R. Kulkarni*. 571, L23 (2002)
- Transient X-Ray Binaries in Elliptical Galaxies. *Anthony L. Piro & Lars Bildsten*. 571, L103 (2002)
- GALAXIES: EVOLUTION**
- The Las Campanas Infrared Survey. III. The *H*-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs. *Hsiao-Wen Chen, P. J. McCarthy, R. O. Marzke, J. Wilson, R. G. Carlberg, A. E. Firth, S. E. Persson, C. N. Sabbey, J. R. Lewis, R. G. McMahon, O. Lahav, R. S. Ellis, P. Martini, R. G. Abraham, A. Oemler, D. C. Murphy, R. S. Somerville, M. G. Beckett, & C. D. Mackay*. 570, 54 (2002)
- The BeppoSAX High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution. *F. La Franca, F. Fiore, C. Vignali, A. Antonelli, A. Comastri, P. Giommi, G. Matt, S. Molendi, G. C. Perola, & F. Pompilio*. 570, 100 (2002)
- Intracuster Red Giant Stars in the Virgo Cluster. *Patrick R. Durrell, Robin Ciardullo, John J. Feldmeier, George H. Jacoby, & Steinn Sigurdsson*. 570, 119 (2002)
- The [O II]  $\lambda 3727$  Luminosity Function of the Local Universe. *J. Gallego, C. E. García-Dabó, J. Zamorano, A. Argón-Salamanca, & M. Rego*. 570, L1 (2002)
- A Bridge from Optical to Infrared Galaxies: Explaining Local Properties and Predicting Galaxy Counts and the Cosmic Background Radiation. *Tomonori Totani & Tsutomu T. Takeuchi*. 570, 470 (2002)
- The Star Formation Rate Intensity Distribution Function: Implications for the Cosmic Star Formation Rate History of the Universe. *Kenneth A. Lanzetta, Noriaki Yahata, Sebastian Pascarelle, Hsiao-Wen Chen, & Alberto Fernández-Soto*. 570, 492 (2002)
- Understanding the Nature of the Optically Faint Radio Sources and Their Connection to the Submillimeter Population. *Scott C. Chapman, Geraint F. Lewis, Douglas Scott, Colin Borys, & Eric Richards*. 570, 557 (2002)
- Keck Absorption-Line Spectroscopy of Galactic Winds in Ultraluminous Infrared Galaxies. *David S. Rupke, Sylvain Veilleux, & D. B. Sanders*. 570, 588 (2002)
- Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogee, Johan H. Knapen, Seppo Laine, Isaac Shlosman, Nick Z. Scoville, & Peter Englmaier*. 570, L55 (2002)
- High-Redshift Galaxies in the Cold Dark Matter Models. *David H. Weinberg, Lars Hernquist, & Neal Katz*. 571, 15 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. III. Cosmological Implications. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore*. 571, 107 (2002)
- The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field E/SO Galaxies at  $z < 1$ . *Myungshin Im, Luc Simard, S. M. Faber, David C. Koo, Karl Gebhardt, Christopher N. A. Willmer, Andrew Phillips, Garth Illingworth, Nicole P. Vogt, & Vicki L. Sarajedini*. 571, 136 (2002)
- The UCSD HIRES/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Howk, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Lubin, & Nao Suzuki*. 571, 693 (2002)
- Optical and Near-Infrared Structural Properties of Cluster Galaxies at  $z \sim 0.3$ . *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli*. 571, 790 (2002)
- History of Milky Way Dwarf Spheroidal Galaxies Imprinted on Abundance Patterns of Neutron-Capture Elements. *Takuji Tsujimoto & Toshikazu Shigeo*. 571, L93 (2002)
- Westphal-MMD 11: An Interacting Luminous Lyman Break Galaxy. *S. C. Chapman, A. Shapley, C. Steidel, & R. Windhorst*. 572, L1 (2002)
- Recent Dynamical Evolution of Galaxy Clusters. *M. Plionis*. 572, L67 (2002)
- The OH Megamaser Luminosity Function. *Jeremy Darling & Riccardo Giovanelli*. 572, 810 (2002)
- GALAXIES: FORMATION**
- Intracuster Red Giant Stars in the Virgo Cluster. *Patrick R. Durrell, Robin Ciardullo, John J. Feldmeier, George H. Jacoby, & Steinn Sigurdsson*. 570, 119 (2002)
- A Bridge from Optical to Infrared Galaxies: Explaining Local Properties and Predicting Galaxy Counts and the Cosmic Background Radiation. *Tomonori Totani & Tsutomu T. Takeuchi*. 570, 470 (2002)
- Understanding the Nature of the Optically Faint Radio Sources and Their Connection to the Submillimeter Population. *Scott C. Chapman, Geraint F. Lewis, Douglas Scott, Colin Borys, & Eric Richards*. 570, 557 (2002)
- The Growth of Galaxies in Cosmological Simulations of Structure Formation. *Chigurupati Murali, Neal Katz, Lars Hernquist, David H. Weinberg, & Romeel Davé*. 571, 1 (2002)
- High-Redshift Galaxies in the Cold Dark Matter Models. *David H. Weinberg, Lars Hernquist, & Neal Katz*. 571, 15 (2002)
- First Stars, Very Massive Black Holes, and Metals. *R. Schneider, A. Ferrara, P. Natarajan, & K. Omukai*. 571, 30 (2002)
- Early Metal Enrichment by Pregalactic Outflows. II. Three-dimensional Simulations of Blow-Away. *Masao Mori, Andrea Ferrara, & Piero Madau*. 571, 40 (2002)

- An Analytical Approach to Inhomogeneous Structure Formation. *Evan Scannapieco & Rennan Barkana*. 571, 585 (2002)
- The Validity of the Adiabatic Contraction Approximation for Dark Matter Halos. *Ronald Jessiet, Thorsten Naab, & Andreas Burkert*. 571, L89 (2002)
- Direct Detection of Cold Dark Matter Substructure. *N. Dalal & C. S. Kochanek*. 572, 25 (2002)
- Dark Matter Properties and Halo Central Densities. *S. M. Khairul Alam, James S. Bullock, & David H. Weinberg*. 572, 34 (2002)
- Observational Constraints on the Self-interacting Dark Matter Scenario and the Growth of Supermassive Black Holes. *Joseph F. Hennawi & Jeremiah P. Ostriker*. 572, 41 (2002)
- Westphal-MMD 11: An Interacting Luminous Lyman Break Galaxy. *S. C. Chapman, A. Shapley, C. Steidel, & R. Windhorst*. 572, L1 (2002)
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- The Effect of Radiative Cooling on the Scale Dependence of the Global Stellar Gas Content of Groups and Clusters of Galaxies. *Xiang-Ping Wu & Yan-Jie Xue*. 572, L19 (2002)
- Can Photoionization Squelching Resolve the Substructure Crisis? *Rachel S. Somerville*. 572, L23 (2002)
- Cosmological Hydrogen Reionization with Three-dimensional Radiative Transfer. *Alexei O. Razoumov, Michael L. Norman, Tom Abel, & Douglas Scott*. 572, 695 (2002)
- On the Direct Detectability of the Cosmic Dark Ages: 21 Centimeter Emission from Minihalos. *Ilian T. Iliev, Paul R. Shapiro, Andrea Ferrara, & Hugo Martel*. 572, L123 (2002)
- GALAXIES: FUNDAMENTAL PARAMETERS**
- The [O II]  $\lambda$ 3727 Luminosity Function of the Local Universe. *J. Gallego, C. E. García-Dabó, J. Zamorano, A. Argón-Salamanca, & M. Rego*. 570, L1 (2002)
- The Shapes of Galaxies in the Sloan Digital Sky Survey. *S. M. Khairul Alam & Barbara S. Ryden*. 570, 610 (2002)
- Determining Central Black Hole Masses in Distant Active Galaxies. *M. Vestergaard*. 571, 733 (2002)
- Optical and Near-Infrared Structural Properties of Cluster Galaxies at  $z \sim 0.3$ . *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli*. 571, 790 (2002)
- Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws. *Timothy A. McKay, Erin Scott Sheldon, David Johnston, Eva K. Grebel, Francisco Prada, Hans-Walter Rix, Neta A. Bahcall, J. Brinkmann, István Csabai, Masataka Fukuguita, D. Q. Lamb, & Donald G. York*. 571, L85 (2002)
- The Inner Scale Length of Spiral Galaxy Rotation Curves. *Riccardo Giovanelli & Martha P. Haynes*. 571, L107 (2002)
- GALAXIES: GENERAL**
- Star Formation Rate From Dust Infrared Emission. *Akio K. Inoue*. 570, L97 (2002)
- GALAXIES: HALOS**
- The Kinematic Connection between Absorbing Gas toward QSOs and Galaxies at Intermediate Redshift. *Charles C. Steidel, Juna A. Kollmeier, Alice E. Shapley, Christopher W. Churchill, Mark Dickinson, & Max Pettini*. 570, 526 (2002)
- Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws. *Timothy A. McKay, Erin Scott Sheldon, David Johnston, Eva K. Grebel, Francisco Prada, Hans-Walter Rix, Neta A. Bahcall, J. Brinkmann, István Csabai, Masataka Fukuguita, D. Q. Lamb, & Donald G. York*. 571, L85 (2002)
- The Validity of the Adiabatic Contraction Approximation for Dark Matter Halos. *Ronald Jessiet, Thorsten Naab, & Andreas Burkert*. 571, L89 (2002)
- The Inner Scale Length of Spiral Galaxy Rotation Curves. *Riccardo Giovanelli & Martha P. Haynes*. 571, L107 (2002)
- Observational Constraints on the Self-interacting Dark Matter Scenario and the Growth of Supermassive Black Holes. *Joseph F. Hennawi & Jeremiah P. Ostriker*. 572, 41 (2002)
- GALAXIES: HIGH-REDSHIFT**
- The Las Campanas Infrared Survey. III. The H-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs. *Hsiao-Wen Chen, P. J. McCarthy, R. O. Marzke, J. Wilson, R. G. Carlberg, A. E. Firth, S. E. Persson, C. N. Sabbey, J. R. Lewis, R. G. McMahon, O. Lahav, R. S. Ellis, P. Martini, R. G. Abraham, A. Oemler, D. C. Murphy, R. S. Somerville, M. G. Beckett, & C. D. Mackay*. 570, 54 (2002)
- A Galactic Wind at  $z = 5.190$ . *Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Dey, Wil van Breugel, Win de Vries, & Michiel Reuland*. 570, 92 (2002)
- The Star Formation Rate Intensity Distribution Function: Implications for the Cosmic Star Formation Rate History of the Universe. *Kenneth A. Lanzetta, Noriaki Yahata, Sebastian Pascarelle, Hsiao-Wen Chen, & Alberto Fernández-Soto*. 570, 492 (2002)
- Understanding the Nature of the Optically Faint Radio Sources and Their Connection to the Submillimeter Population. *Scott C. Chapman, Geraint F. Lewis, Douglas Scott, Colin Borys, & Eric Richards*. 570, 557 (2002)
- Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogee, Johan H. Knapen, Seppo Laine, Issac Shlosman, Nick Z. Scoville, & Peter Englmaier*. 570, L55 (2002)
- Determining Central Black Hole Masses in Distant Active Galaxies. *M. Vestergaard*. 571, 733 (2002)
- GALAXIES: INDIVIDUAL**
- Messier Number: M31**
- Bright X-Ray Sources in M31 Globular Clusters. *R. Di Stefano, A. K. H. Kong, M. R. Garcia, P. Barmby, J. Greiner, S. S. Murray, & F. A. Primini*. 570, 618 (2002)
- On the X-Ray Source Luminosity Distributions in the Bulge and Disk of M31: First Results from the XMM-Newton Survey. *Sergey P. Trudolyubov, Konstantin N. Borozdin, William C. Priedhorsky, Keith O. Mason, & France A. Cordova*. 571, L17 (2002)
- Messier Number: M74**
- XMM-Newton Observation of the Spiral Galaxy M74 (NGC 628). *Roberto Soria & Albert K. H. Kong*. 572, L33 (2002)
- Messier Number: M83**
- Optical Spectroscopy of Metal-rich H II Regions and Circumstellar Hot Spots in M83 and NGC 3351. *Fabio Bresolin & Robert C. Kennicutt, Jr.* 572, 838 (2002)
- Messier Number: M87**
- Abundance Gradients and the Role of Supernovae in M87. *Fabio Gastaldello & Silvano Molendo*. 572, 160 (2002)
- NGC Number: NGC 628**
- XMM-Newton Observation of the Spiral Galaxy M74 (NGC 628). *Roberto Soria & Albert K. H. Kong*. 572, L33 (2002)
- On the Progenitor of the Type Ic Supernova 2002ap. *S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen*. 572, L147 (2002)
- NGC Number: NGC 891**
- Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Otte, J. S. Gallagher III, & R. J. Reynolds*. 572, 823 (2002)
- NGC Number: NGC 3079**
- Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Otte, J. S. Gallagher III, & R. J. Reynolds*. 572, 823 (2002)
- NGC Number: NGC 3351**
- Optical Spectroscopy of Metal-rich H II Regions and Circumstellar Hot Spots in M83 and NGC 3351. *Fabio Bresolin & Robert C. Kennicutt, Jr.* 572, 838 (2002)
- NGC Number: NGC 3516**
- The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra*. 571, 256 (2002)
- The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516. *I. M. George, T. J. Turner, H. Netzer, S. B. Kraemer, J. Ruiz, D. Chelouche, D. M. Crenshaw, T. Yaqoob, K. Nandra, & R. F. Mushotzky*. 571, 265 (2002)
- An X-Ray Reprocessing Model of Disk Thermal Emission in Type 1 Seyfert Galaxies. *James Chiang*. 572, 79 (2002)
- NGC Number: NGC 3690**
- Resolving the Buried Starburst in Arp 299. *V. Charmandaris, G. J. Stacey, & G. Guil*. 571, 282 (2002)

**NGC Number: NGC 3783**

The Mass of the Central Black Hole in the Seyfert Galaxy NGC 3783. *Christopher A. Onken & Bradley M. Peterson.* 572, 746 (2002)

**NGC Number: NGC 4631**

Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Otte, J. S. Gallagher III, & R. J. Reynolds.* 572, 823 (2002)

**NGC Number: NGC 4634**

Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Otte, J. S. Gallagher III, & R. J. Reynolds.* 572, 823 (2002)

**NGC Number: NGC 5248**

Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogee, Johan H. Knapen, Seppo Laine, Issac Shlosman, Nick Z. Scoville, & Peter Englmaier.* 570, L55 (2002)

**NGC Number: NGC 5775**

Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Otte, J. S. Gallagher III, & R. J. Reynolds.* 572, 823 (2002)

**NGC Number: NGC 6384**

Optical Spectroscopy of Metal-rich H II Regions and Circumstellar Hot Spots in M83 and NGC 3351. *Fabio Bresolin & Robert C. Kennicutt, Jr.* 572, 838 (2002)

**NGC Number: NGC 7469**

An X-Ray Reprocessing Model of Disk Thermal Emission in Type I Seyfert Galaxies. *James Chiang.* 572, 79 (2002)

**Name: Arp 299**

Resolving the Buried Starburst in Arp 299. *V. Charmandaris, G. J. Stacey, & G. Gull.* 571, 282 (2002)

**Name: Draco**

History of Milky Way Dwarf Spheroidal Galaxies Imprinted on Abundance Patterns of Neutron-Capture Elements. *Takuji Tsujimoto & Toshikazu Shigeyama.* 571, L93 (2002)

**Name: Holmberg II**

ROSAT X-Ray Observations of the Dwarf Galaxy Holmberg II. *Jürgen Kerp, Fabian Walter, & Elias Brinks.* 571, 809 (2002)

**Name: Sextans**

History of Milky Way Dwarf Spheroidal Galaxies Imprinted on Abundance Patterns of Neutron-Capture Elements. *Takuji Tsujimoto & Toshikazu Shigeyama.* 571, L93 (2002)

**Name: Ursa Minor**

History of Milky Way Dwarf Spheroidal Galaxies Imprinted on Abundance Patterns of Neutron-Capture Elements. *Takuji Tsujimoto & Toshikazu Shigeyama.* 571, L93 (2002)

**Alphanumeric: CFRS 03.1077**

The Gravitational Lens CFRS 03.1077. *David Crampton, David Schade, F. Hammer, A. Matzkin, S. J. Lilly, & O. Le Fèvre.* 570, 86 (2002)

**Alphanumeric: J1236.8+6215**

A Galactic Wind at  $z = 5.190$ . *Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Dey, Wil van Breugel, Win de Vries, & Michiel Reuland.* 570, 92 (2002)

**GALAXIES: INTERACTIONS**

The Scale-dependent Energy Transfer Rate as a Tracer for Star Formation in Cosmological N-Body Simulations. *M. Hoesft, J. P. Mücke, & P. Heide.* 570, 33 (2002)

Supermassive Black Holes in Galactic Nuclei. *A. Cavaliere & V. Vittorini.* 570, 114 (2002)

Intracluster Red Giant Stars in the Virgo Cluster. *Patrick R. Durrell, Robin Ciardullo, John J. Feldmeier, George H. Jacoby, & Steinn Sigurdsson.* 570, 119 (2002)

Resolving the Buried Starburst in Arp 299. *V. Charmandaris, G. J. Stacey, & G. Gull.* 571, 282 (2002)

The Circumgalactic Environment of Bright IRAS Galaxies. *Y. Krongold, D. Dultzin-Hacyan, & P. Marziani.* 572, 169 (2002)

The Extended Emission-Line Region of 4C 37.43. *Alan Stockton, John W. MacKenty, Esther M. Hu, & Tae-Sun Kim.* 572, 735 (2002)

The OH Megamaser Luminosity Function. *Jeremy Darling & Riccardo Giovanelli.* 572, 810 (2002)

**GALAXIES: INTERGALACTIC MEDIUM**

Evolution of the Ionizing Radiation Background and Star Formation in the Aftermath of Cosmological Reionization. *Renyue Cen & Patrick McDonald.* 570, 457 (2002)

First Stars, Very Massive Black Holes, and Metals. *R. Schneider, A. Ferrara, P. Natarajan, & K. Omukai.* 571, 30 (2002)

Early Metal Enrichment by Pregalactic Outflows. II. Three-dimensional Simulations of Blow-Away. *Masao Mori, Andrea Ferrara, & Piero Madau.* 571, 40 (2002)

A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . IV. The Clustering and Evolution of Clouds at  $z \leq 1.7$ . *Adam Dobrzycki, Jill Bechtold, Jennifer Scott, & Miwa Morita.* 571, 654 (2002)

A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . V. The Extragalactic Ionizing Background at Low Redshift. *Jennifer Scott, Jill Bechtold, Miwa Morita, Adam Dobrzycki, & Varsha P. Kulkarni.* 571, 665 (2002)

Mutual Constraints between Reionization Models and Parameter Extraction from Cosmic Microwave Background Data. *Aparna Venkatesan.* 572, 15 (2002)

A Limit on the Metallicity of Compact High-Velocity Clouds. *Kenneth R. Sembach, Brad K. Gibson, Yeshe Fenner, & Mary E. Putman.* 572, 178 (2002)

The Effect of Radiative Cooling on the Scale Dependence of the Global Stellar Gas Content of Groups and Clusters of Galaxies. *Xiang-Ping Wu & Yan-Jie Xue.* 572, L19 (2002)

Cosmological Hydrogen Reionization with Three-dimensional Radiative Transfer. *Alexei O. Razoumov, Michael L. Norman, Tom Abel, & Douglas Scott.* 572, 695 (2002)

On the Direct Detectability of the Cosmic Dark Ages: 21 Centimeter Emission from Minihalos. *Ilian T. Iliev, Paul R. Shapiro, Andrea Ferrara, & Hugo Martel.* 572, L123 (2002)

Chandra Detection of O VIII Ly $\alpha$  Absorption from an Overdense Region in the Intergalactic Medium. *Taotao Fang, Herman L. Marshall, Julia C. Lee, David S. Davis, & Claude R. Canizares.* 572, L127 (2002)

WHAM Observations of H $\alpha$  From High-Velocity Clouds: Are they Galactic or Extragalactic? *S. L. Tufte, J. D. Wilson, G. J. Madsen, L. M. Haffner, & R. J. Reynolds.* 572, L153 (2002)

**GALAXIES: ISM**

Formation and Fragmentation of Gaseous Spurs in Spiral Galaxies. *Woong-Tae Kim & Eve C. Ostriker.* 570, 132 (2002)

Untangling the X-Ray Emission from the Sa Galaxy NGC 1291 with Chandra. *Jimmy A. Irwin, Craig L. Sarazin, & Joel N. Bregman.* 570, 152 (2002)

Detection of X-Ray Emission from the Arches Cluster near the Galactic Center. *F. Yusef-Zadeh, C. Law, M. Wardle, Q. D. Wang, A. Fruscione, C. C. Lang, & A. Cotera.* 570, 665 (2002)

Detecting Gravitational Lensing Cosmic Shear from Samples of Several Galaxies Using Two-Dimensional Spectral Imaging. *A. W. Blain.* 570, L51 (2002)

Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogee, Johan H. Knapen, Seppo Laine, Issac Shlosman, Nick Z. Scoville, & Peter Englmaier.* 570, L55 (2002)

The Origin of Far-Infrared [C II] Emission in the Large Magellanic Cloud. *Sungeun Kim & William T. Reach.* 571, 288 (2002)

ROSAT X-Ray Observations of the Dwarf Galaxy Holmberg II. *Jürgen Kerp, Fabian Walter, & Elias Brinks.* 571, 809 (2002)

Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Otte, J. S. Gallagher III, & R. J. Reynolds.* 572, 823 (2002)

**GALAXIES: JETS**

Chandra Discovery of a 300 Kiloparsec X-Ray Jet in the Gigahertz-peaked Spectrum Quasar PKS 1127-145. *Aneta Siemiginowska, Jill Bechtold, Thomas L. Aldcroft, Martin Elvis, D. E. Harris, & Adam Dobrzycki.* 570, 543 (2002)

A Survey of Extended Radio Jets in Active Galactic Nuclei with Chandra and the Hubble Space Telescope: First Results. *Rita M. Sambruna, L. Maraschi, F. Tavecchio, C. Megan Urry, C. C. Cheung, G. Chartas, R. Scarpa, & Jessica K. Gambill.* 571, 206 (2002)

A Chandra Search for X-Ray Jets in  $z \sim 6$  Quasars. *D. A. Schwartz.* 571, L71 (2002)

Will Jets Identify the Progenitors of Type Ia Supernovae? *Mario Livio, Adam Riess, & William Sparks.* 571, L99 (2002)

- Three-dimensional Hydrodynamic Simulations of Relativistic Extragalactic Jets. *Philip A. Hughes, Mark A. Miller, & G. Comer Duncan.* 572, 713 (2002)
- Emission of Positron Annihilation Line Radiation by Clusters of Galaxies. *Steven R. Furlanetto & Abraham Loeb.* 572, 796 (2002)
- GALAXIES: KINEMATICS AND DYNAMICS**
- The Kinematic Connection between Absorbing Gas toward QSOs and Galaxies at Intermediate Redshift. *Charles C. Steidel, Juna A. Kollmeier, Alice E. Shapley, Christopher W. Churchill, Mark Dickinson, & Max Pettini.* 570, 526 (2002)
- Detecting Gravitational Lensing Cosmic Shear from Samples of Several Galaxies Using Two-Dimensional Spectral Imaging. *A. W. Blain.* 570, L51 (2002)
- Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogle, Johan H. Knapen, Seppo Laiue, Issac Shlosman, Nick Z. Scoville, & Peter Englmaier.* 570, L55 (2002)
- Millisecond Pulsars as Probes of Mass Segregation in the Galactic Center. *Julio Chanamé & Andrew Gould.* 571, 320 (2002)
- Do Modified Newtonian Dynamics Follow from the Cold Dark Matter Paradigm? *Mordehai Milgrom.* 571, L81 (2002)
- Dark Matter Properties and Halo Central Densities. *S. M. Khairul Alam, James S. Bullock, & David H. Weinberg.* 572, 34 (2002)
- Dynamics of a Massive Black Hole at the Center of a Dense Stellar System. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb.* 572, 371 (2002)
- Technique for Modeling the Gravitational Field of a Galactic Disk. *Donald H. Eckhardt & José Luis G. Pestaña.* 572, L135 (2002)
- GALAXIES: LOCAL GROUP**
- WHAM Observations of H $\alpha$  From High-Velocity Clouds: Are they Galactic or Extragalactic? *S. L. Tufte, J. D. Wilson, G. J. Madsen, L. M. Haffner, & R. J. Reynolds.* 572, L153 (2002)
- GALAXIES: LUMINOSITY FUNCTION, MASS FUNCTION**
- The [O III]  $\lambda$ 3727 Luminosity Function of the Local Universe. *J. Gallego, C. E. García-Dabó, J. Zamorano, A. Argón-Salamanca, & M. Rego.* 570, L1 (2002)
- The DEEP Groth Strip Survey. II. Number Density and Luminosity Function of Field ESO Galaxies at  $z < 1$ . *Myunghsin Im, Luc Simard, S. M. Faber, David C. Koo, Karl Gebhardt, Christopher N. A. Willmer, Andrew Phillips, Garth Illingworth, Nicole P. Vogt, & Vicki L. Sarajedini.* 571, 136 (2002)
- Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws. *Timothy A. McKay, Erin Scott Sheldon, David Johnston, Eva K. Grebel, Francisco Prada, Hans-Walter Rix, Neta A. Bahcall, J. Brinkmann, István Csabai, Masataka Fukuguita, D. Q. Lamb, & Donald G. York.* 571, L85 (2002)
- The OH Megamaser Luminosity Function. *Jeremy Darling & Riccardo Giovanelli.* 572, 810 (2002)
- GALAXIES: MAGELLANIC CLOUDS**
- The Origin of Far-Infrared [C II] Emission in the Large Magellanic Cloud. *Sungeun Kim & William T. Reach.* 571, 288 (2002)
- Photometric Solutions for Semidetached Eclipsing Binaries: Selection of Distance Indicators in the Small Magellanic Cloud. *J. S. B. Wyithe & R. E. Wilson.* 571, 293 (2002)
- GALAXIES: MAGNETIC FIELDS**
- Magnetized Turbulent Dynamos in Protogalaxies. *Leonid Malyskhin & Russell M. Kulsrud.* 571, 619 (2002)
- Ultrahigh-Energy Cosmic-Ray Propagation in the Galaxy: Clustering versus Isotropy. *Jaime Alvarez-Muñiz, Ralph Engel, & Todor Stanev.* 572, 185 (2002)
- Dynamical Quenching of the  $\alpha^2$  Dynamo. *George B. Field & Eric G. Blackman.* 572, 685 (2002)
- GALAXIES: NUCLEI**
- Supermassive Black Holes in Galactic Nuclei. *A. Cavaliere & V. Vittorini.* 570, 114 (2002)
- Inner-Shell 1s–2p Soft X-Ray Absorption Lines. *Ehud Behar & Hagai Netzer.* 570, 165 (2002)
- Dust Emission from Active Galactic Nuclei. *Maia Nenkova, Željko Ivezić, & Moshe Elitzur.* 570, L9 (2002)
- The Blazar Main Sequence. *A. Cavaliere & V. D'Elia.* 571, 226 (2002)
- The Nuclei of Radio Galaxies in the Ultraviolet: The Signature of Different Emission Processes. *Marco Chiaberge, F. Duccio Macchetto, William B. Sparks, Alessandro Capetti, Mark G. Allen, & André R. Martel.* 571, 247 (2002)
- The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra.* 571, 256 (2002)
- The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516. *I. M. George, T. J. Turner, H. Netzer, S. B. Kraemer, J. Ruiz, D. Chelouche, D. M. Crenshaw, T. Yaqoob, K. Nandra, & R. F. Mushotzky.* 571, 265 (2002)
- The Relation Between Mid-Infrared Emission and Black Hole Mass in Active Galactic Nuclei: A Direct Way to Probe Black Hole Growth? *Almudena Alonso-Herrero, Valentin D. Ivanov, Ray Jayawardhana, & Takashi Hosokawa.* 571, L1 (2002)
- Subarcsecond Emission in Seyfert Galaxies: The Nuclear Component in the L and M Bands. *M. A. Prieto, J. Reunanen, & J. K. Kotilainen.* 571, L7 (2002)
- The HELIX2 XMM Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy. *A. Comastri, M. Mignoli, P. Ciliegli, P. Severgnini, R. Maiolino, M. Brusa, F. Fiore, A. Baldi, S. Molendi, R. Morganti, C. Vignali, F. La Franca, G. Matt, & G. C. Perola.* 571, 771 (2002)
- The O I Line Emission in Active Galactic Nuclei Revisited. *A. Rodríguez-Ardila, S. M. Viegas, M. G. Pastoriza, L. Prato, & Carlos J. Donzelli.* 572, 94 (2002)
- The Far-Infrared Energy Distributions of Seyfert and Starburst Galaxies in the Local Universe: *Infrared Space Observatory* Photometry of the 12 Micron Active Galaxy Sample. *Luigi Spinoglio, Paola Andreani, & Matthew A. Malkan.* 572, 105 (2002)
- The Mass of the Central Black Hole in the Seyfert Galaxy NGC 3783. *Christopher A. Onken & Bradley M. Peterson.* 572, 746 (2002)
- A Simple Model for a Magnetic Reconnection-heated Corona. *B. F. Liu, S. Mineshige, & K. Shibata.* 572, L173 (2002)
- GALAXIES: PECULIAR**
- Resolving the Buried Starburst in Arp 299. *V. Charmandaris, G. J. Stacey, & G. Gull.* 571, 282 (2002)
- GALAXIES: PHOTOMETRY**
- The Shapes of Galaxies in the Sloan Digital Sky Survey. *S. M. Khairul Alam & Barbara S. Ryden.* 570, 610 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. I. Results. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore.* 571, 56 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. III. Cosmological Implications. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore.* 571, 107 (2002)
- Optical and Near-Infrared Structural Properties of Cluster Galaxies at  $z \sim 0.3$ . *F. La Barbera, G. Busarello, P. Merluzzi, M. Massarotti, & M. Capaccioli.* 571, 790 (2002)
- The Inner Scale Length of Spiral Galaxy Rotation Curves. *Riccardo Giovanelli & Martha P. Haynes.* 571, L107 (2002)
- The Far-Infrared Energy Distributions of Seyfert and Starburst Galaxies in the Local Universe: *Infrared Space Observatory* Photometry of the 12 Micron Active Galaxy Sample. *Luigi Spinoglio, Paola Andreani, & Matthew A. Malkan.* 572, 105 (2002)
- QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring. *D. Alcalde, E. Mediavilla, O. Moreau, J. A. Muñoz, C. Libbrecht, L. J. Goicoechea, J. Surdej, E. Puga, Y. De Rop, R. Barrena, R. Gil-Merino, B. A. McLeod, V. Motta, A. Oscz, & M. Serra-Ricart.* 572, 729 (2002)
- GALAXIES: QUASARS: ABSORPTION LINES**
- Evolution of the Ionizing Radiation Background and Star Formation in the Aftermath of Cosmological Reionization. *Renyue Cen & Patrick McDonald.* 570, 457 (2002)
- Testing Theories That Predict Time Variation of Fundamental Constants. *Susana J. Landau & Hector Vucetich.* 570, 463 (2002)
- Keck HIRES Spectroscopy of the Fe II Low-Ionization Broad Absorption Line FBQS 0840+3633: Evidence for Two Outflows on Different Scales. *Martijn de Kool, Robert H. Becker, Nahum Arav, Michael D. Gregg, & Richard L. White.* 570, 514 (2002)
- The Kinematic Connection between Absorbing Gas toward QSOs and Galaxies at Intermediate Redshift. *Charles C. Steidel, Juna A. Kollmeier, Alice E. Shapley, Christopher W. Churchill, Mark Dickinson, & Max Pettini.* 570, 526 (2002)



- A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . IV. The Clustering and Evolution of Clouds at  $z \leq 1.7$ . *Adam Dobrzycki, Jill Bechtold, Jennifer Scott, & Miwa Morita*. 571, 654 (2002)
- A Uniform Analysis of the Ly $\alpha$  Forest at  $z = 0-5$ . V. The Extragalactic Ionizing Background at Low Redshift. *Jennifer Scott, Jill Bechtold, Miwa Morita, Adam Dobrzycki, & Varsha P. Kulkarni*. 571, 665 (2002)
- The UCSD HIRES/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Howk, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Rubin, & Nao Suzuki*. 571, 693 (2002)
- Chandra Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens? *Paul J. Green, Chris Kochanek, Aneta Siemiginowska, Dong-Woo Kim, Maxim Markevitch, John Silverman, Anil Dosaj, Buell T. Jannuzi, & Chris Smith*. 571, 721 (2002)
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Chandra Detection of O VIII Ly $\alpha$  Absorption from an Overdense Region in the Intergalactic Medium. *Taotao Fang, Herman L. Marshall, Julia C. Lee, David S. Davis, & Claude R. Canizares*. 572, L127 (2002)
- GALAXIES: QUASARS: EMISSION LINES**
- A Classic Type 2 Quasar. *Colin Norman, Guenther Hasinger, Riccardo Giacconi, Roberto Gilli, Lisa Kewley, Mario Nonino, Piero Rosati, Gyula Szokoly, Paolo Tozzi, Junxian Wang, Wei Zheng, Andrew Zirm, Jacqueline Bergeron, Roberto Gilmozzi, Norman Grogan, Anton Koekemoer, & Ethan Schreier*. 571, 218 (2002)
- Determining Central Black Hole Masses in Distant Active Galaxies. *M. Vestergaard*. 571, 733 (2002)
- Searching for the Physical Drivers of Eigenvector 1: From Quasars to Nanoquasars. *R. Zamanov & P. Marziani*. 571, L77 (2002)
- GALAXIES: QUASARS: GENERAL**
- The BeppoSAX High-Energy Large-Area Survey. V. The Nature of the Hard X-Ray Source Population and Its Evolution. *F. La Franca, F. Fiore, C. Vignali, A. Antonelli, A. Comastri, P. Giommi, G. Matt, S. Molendi, G. C. Perola, & F. Pompilio*. 570, 100 (2002)
- Supermassive Black Holes in Galactic Nuclei. *A. Cavaliere & V. Vittorini*. 570, 114 (2002)
- Dust Emission from Active Galactic Nuclei. *Maia Nenkova, Željko Ivezić, & Moshe Elitzur*. 570, L9 (2002)
- The Shape of the Relativistic Iron K $\alpha$  Line from MCG -6-30-15 Measured with the Chandra High Energy Transmission Grating Spectrometer and the Rossi X-Ray Timing Explorer. *Julia C. Lee, Kazushi Iwasawa, John C. Houck, Andrew C. Fabian, Herman L. Marshall, & Claude R. Canizares*. 570, L47 (2002)
- A Survey of Extended Radio Jets in Active Galactic Nuclei with Chandra and the Hubble Space Telescope: First Results. *Rita M. Sambruna, L. Maraschi, F. Tavecchio, C. Megan Urry, C. C. Cheung, G. Chartas, R. Scarpa, & Jessica K. Gambill*. 571, 206 (2002)
- The Blazar Main Sequence. *A. Cavaliere & V. D'Elia*. 571, 226 (2002)
- The Relation Between Mid-Infrared Emission and Black Hole Mass in Active Galactic Nuclei: A Direct Way to Probe Black Hole Growth? *Almudena Alonso-Herrero, Valentin D. Ivanov, Ray Jayawardhana, & Takashi Hosokawa*. 571, L1 (2002)
- A Submillimeter Survey of Gravitationally Lensed Quasars. *Richard Barvainis & Rob Ivison*. 571, 712 (2002)
- A Chandra Search for X-Ray Jets in  $z \sim 6$  Quasars. *D. A. Schwartz*. 571, L71 (2002)
- The Expected Properties of Dark Lenses. *David Rusin*. 572, 705 (2002)
- GALAXIES: QUASARS: INDIVIDUAL**
- Alphanumeric: 4C 37.43**
- The Extended Emission-Line Region of 4C 37.43. *Alan Stockton, John W. MacKenty, Esther M. Hu, & Tae-Sun Kim*. 572, 735 (2002)
- Alphanumeric: FBQS 0840+3633**
- Keck HIRES Spectroscopy of the Fe II Low-Ionization Broad Absorption Line FBQS 0840+3633: Evidence for Two Outflows on Different Scales. *Martijn de Kool, Robert H. Becker, Nahum Arav, Michael D. Gregg, & Richard L. White*. 570, 514 (2002)
- Alphanumeric: PKS 1127-145**
- Chandra Discovery of a 300 Kiloparsec X-Ray Jet in the Gigahertz-peaked Spectrum Quasar PKS 1127-145. *Aneta Siemiginowska, Jill Bechtold, Thomas L. Aldcroft, Martin Elvis, D. E. Harris, & Adam Dobrzycki*. 570, 543 (2002)
- Alphanumeric: Q0054+144**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q0215+015**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q0302-223**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q0454-220**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q0935+417**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q1047+550**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q1206+459**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q1318+290B**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q1451-375**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q2112+059**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q2223-052**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q2237+0305**
- QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring. *D. Alcalde, E. Mediavilla, O. Moreau, J. A. Muñoz, C. Libbrecht, L. J. Goicoechea, J. Surdej, E. Puga, Y. De Rop, R. Barrena, R. Gil-Merino, B. A. McLeod, V. Motta, A. Oscoz, & M. Serra-Ricart*. 572, 729 (2002)
- Alphanumeric: Q2251+113**
- The Nondamped Nature of the 12 Low-Redshift Damped Ly $\alpha$  Candidate Systems. *David A. Turnshek & Sandhya M. Rao*. 572, L7 (2002)
- Alphanumeric: Q2345+007**
- Chandra Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens? *Paul J. Green, Chris Kochanek, Aneta Siemiginowska, Dong-Woo Kim, Maxim Markevitch, John Silverman, Anil Dosaj, Buell T. Jannuzi, & Chris Smith*. 571, 721 (2002)
- Alphanumeric: RX J0911.4+0551**
- The Time Delay of the Quadruple Quasar RX J0911.4+0551. *Jens Hjorth, Ingunn Burud, Andreas O. Jaunsen, Paul L. Schecter, Jean-Paul Kneib, Michael I. Andersen, Heidi Korhonen, Jacob W. Clasen, A. Amanda Kaas, Roy Vstensen, Jaan Pelt, & Frank J. Pijpers*. 572, L11 (2002)
- Alphanumeric: SDSS J103027.10+052455.0**
- Chandra Detection of Highest Redshift ( $z \sim 6$ ) Quasars in X-Rays. *Smita Mathur, Belinda J. Wilkes, & Himel Ghosh*. 570, L5 (2002)
- Alphanumeric: SDSS J130608.26+035626.3**
- Chandra Detection of Highest Redshift ( $z \sim 6$ ) Quasars in X-Rays. *Smita Mathur, Belinda J. Wilkes, & Himel Ghosh*. 570, L5 (2002)
- A Chandra Search for X-Ray Jets in  $z \sim 6$  Quasars. *D. A. Schwartz*. 571, L71 (2002)
- Alphanumeric: SDSSp J083643+005453**
- Chandra Detection of Highest Redshift ( $z \sim 6$ ) Quasars in X-Rays. *Smita Mathur, Belinda J. Wilkes, & Himel Ghosh*. 570, L5 (2002)
- A Chandra Search for X-Ray Jets in  $z \sim 6$  Quasars. *D. A. Schwartz*. 571, L71 (2002)

# 1 Galaxies: Quasars: Individual-Galaxy: Abundances

Alphanumeric: SDSS J130608+035626

A Chandra Search for X-Ray Jets in  $z \sim 6$  Quasars. *D. A. Schwartz*. 571, L71 (2002)

## GALAXIES: SEYFERT

Dust Emission from Active Galactic Nuclei. *Maia Nenkova, Željko Ivezić, & Moshe Elitzur*. 570, L9 (2002)

Ubiquitous Variability of X-Ray-absorbing Column Densities in Seyfert 2 Galaxies. *G. Risaliti, M. Elvis, & F. Nicastro*. 571, 234 (2002)

The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra*. 571, 256 (2002)

The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516. *I. M. George, T. J. Turner, H. Netzer, S. B. Kraemer, J. Ruiz, D. Chelouche, D. M. Crenshaw, T. Yaqoob, K. Nandra, & R. F. Mushotzky*. 571, 265 (2002)

The Relation Between Mid-Infrared Emission and Black Hole Mass in Active Galactic Nuclei: A Direct Way to Probe Black Hole Growth? *Almudena Alonso-Herrero, Valentin D. Ivanov, Ray Jayawardhana, & Takashi Hosokawa*. 571, L1 (2002)

Subarcsecond Emission in Seyfert Galaxies: The Nuclear Component in the L and M Bands. *M. A. Prieto, J. Reunanen, & J. K. Kotilainen*. 571, L7 (2002)

Determining Central Black Hole Masses in Distant Active Galaxies. *M. Vestergaard*. 571, 733 (2002)

An X-Ray Reprocessing Model of Disk Thermal Emission in Type I Seyfert Galaxies. *James Chiang*. 572, 79 (2002)

The O I Line Emission in Active Galactic Nuclei Revisited. *A. Rodríguez-Ardila, S. M. Viegas, M. G. Pastoriza, L. Prato, & Carlos J. Donzelli*. 572, 94 (2002)

The Far-Infrared Energy Distributions of Seyfert and Starburst Galaxies in the Local Universe: Infrared Space Observatory Photometry of the 12 Micron Active Galaxy Sample. *Luigi Spinoglio, Paola Andreani, & Matthew A. Malkan*. 572, 105 (2002)

The Interpretation of the Emission Spectra of the Seyfert 2 Galaxy NGC 7130: Determination of the Active Galactic Nucleus and Starburst Contributions. *M. Contini, M. Radovich, P. Rafanelli, & G. M. Richter*. 572, 124 (2002)

The Mass of the Central Black Hole in the Seyfert Galaxy NGC 3783. *Christopher A. Onken & Bradley M. Peterson*. 572, 746 (2002)

Are the Narrow-Line Regions in Active Galaxies Dusty and Radiation Pressure Dominated? *Michael A. Dopita, Brent A. Groves, Ralph S. Sutherland, Luc Binette, & Gerald Cecil*. 572, 753 (2002)

## GALAXIES: SPIRAL

The Shapes of Galaxies in the Sloan Digital Sky Survey. *S. M. Khairul Alam & Barbara S. Ryden*. 570, 610 (2002)

Detecting Gravitational Lensing Cosmic Shear from Samples of Several Galaxies Using Two-Dimensional Spectral Imaging. *A. W. Blain*. 570, L51 (2002)

Subarcsecond Emission in Seyfert Galaxies: The Nuclear Component in the L and M Bands. *M. A. Prieto, J. Reunanen, & J. K. Kotilainen*. 571, L7 (2002)

The Inner Scale Length of Spiral Galaxy Rotation Curves. *Riccardo Giovanelli & Martha P. Haynes*. 571, L107 (2002)

XMM-Newton Observation of the Spiral Galaxy M74 (NGC 628). *Roberto Soria & Albert K. H. Kong*. 572, L33 (2002)

## GALAXIES: STARBURST

A Galactic Wind at  $z = 5.190$ . *Steve Dawson, Hyron Spinrad, Daniel Stern, Arjun Dey, Wil van Breugel, Win de Vries, & Michiel Reuland*. 570, 92 (2002)

Keck Absorption-Line Spectroscopy of Galactic Winds in Ultraluminous Infrared Galaxies. *David S. Rupke, Sylvain Veilleux, & D. B. Sanders*. 570, 588 (2002)

Resolving the Buried Starburst in Arp 299. *V. Charmandaris, G. J. Stacey, & G. Gull*. 571, 282 (2002)

The Far-Infrared Energy Distributions of Seyfert and Starburst Galaxies in the Local Universe: Infrared Space Observatory Photometry of the 12 Micron Active Galaxy Sample. *Luigi Spinoglio, Paola Andreani, & Matthew A. Malkan*. 572, 105 (2002)

The Interpretation of the Emission Spectra of the Seyfert 2 Galaxy NGC 7130: Determination of the Active Galactic Nucleus and Starburst Contributions. *M. Contini, M. Radovich, P. Rafanelli, & G. M. Richter*. 572, 124 (2002)

The Circumgalactic Environment of Bright IRAS Galaxies. *Y. Krongold, D. Dulz, in-Huayan, & P. Marziani*. 572, 169 (2002)

Westphal-MMD 11: An Interacting Luminous Lyman Break Galaxy. *S. C. Chapman, A. Shapley, C. Steidel, & R. Windhorst*. 572, L1 (2002)

The Extended Emission-Line Region of 4C 37.43. *Alan Stockton, John W. MacKenty, Esther M. Hu, & Tae-Sun Kim*. 572, 735 (2002)

The OH Megamaser Luminosity Function. *Jeremy Darling & Riccardo Giovanelli*. 572, 810 (2002)

## GALAXIES: STAR CLUSTERS

Bright X-Ray Sources in M31 Globular Clusters. *R. Di Stefano, A. K. H. Kong, M. R. Garcia, P. Barmby, J. Greiner, S. S. Murray, & F. A. Primini*. 570, 618 (2002)

## GALAXIES: STATISTICS

The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data. *Max Tegmark, Scott Dodelson, Daniel J. Eisenstein, Vijay Narayanan, Roman Scoccimarro, Ryan Scranton, Michael A. Strauss, Andrew Connolly, Joshua A. Frieman, James E. Gunn, Lam Hui, Bhuvnesh Jain, David Johnston, Stephen Kent, Jon Loveday, Robert C. Nichol, Liam O'Connell, Ravi K. Sheth, Albert Stebbins, Alexander S. Szalay, István Szapudi, Michael S. Vogeley, Idit Zehavi, James Annis, Neta A. Bahcall, J. Brinkmann, István Csabai, Mamoru Doi, Masataka Fukugita, Greg Hennessy, Željko Ivezić, Gillian R. Knapp, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Timothy A. McKay, Peter Kunszt, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Michael Richmond, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York*. 571, 191 (2002)

The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data. *Scott Dodelson, Vijay K. Narayanan, Max Tegmark, Ryan Scranton, Tamas Budavári, Andrew Connolly, István Csabai, Daniel Eisenstein, Joshua A. Frieman, James E. Gunn, Lam Hui, Bhuvnesh Jain, David Johnston, Stephen Kent, Jon Loveday, Robert C. Nichol, Liam O'Connell, Roman Scoccimarro, Ravi K. Sheth, Albert Stebbins, Michael A. Strauss, Alexander S. Szalay, István Szapudi, Michael S. Vogeley, Idit Zehavi, James Annis, Neta A. Bahcall, Jon Brinkman, Mamoru Doi, Masataka Fukugita, Greg Hennessy, Željko Ivezić, Gillian R. Knapp, Peter Kunszt, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York*. 572, 140 (2002)

## GALAXIES: STELLAR CONTENT

Will Jets Identify the Progenitors of Type Ia Supernovae? *Mario Livio, Adam Riess, & William Sparks*. 571, L99 (2002)

Optical Spectroscopy of Metal-rich H II Regions and Circumstellar Hot Spots in M83 and NGC 3351. *Fabio Bresolin & Robert C. Kennicutt, Jr.* 572, 838 (2002)

## GALAXIES: STRUCTURE

Formation and Fragmentation of Gaseous Spurs in Spiral Galaxies. *Woong-Tae Kim & Eve C. Ostriker*. 570, 132 (2002)

Counterclockwise Magnetic Fields in the Norma Spiral Arm. *J. L. Han, R. N. Manchester, A. G. Lyne, & G. J. Qiao*. 570, L17 (2002)

Discovery and Implications of a New Large-Scale Stellar Bar in NGC 5248. *Shardha Jogee, Johan H. Knapen, Seppo Laine, Issac Shlosman, Nick Z. Scoville, & Peter Englmaier*. 570, L55 (2002)

Dynamical Configuration of Sloan Digital Sky Survey Weak-lensing Scaling Laws. *Timothy A. McKay, Erin Scott Sheldon, David Johnston, Eva K. Grebel, Francisco Prada, Hans-Walter Rix, Neta A. Bahcall, J. Brinkmann, István Csabai, Masataka Fukugita, D. Q. Lamb, & Donald G. York*. 571, L85 (2002)

Dark Matter Properties and Halo Central Densities. *S. M. Khairul Alam, James S. Bullock, & David H. Weinberg*. 572, 34 (2002)

Microarcsecond Radio Imaging Using Earth-Orbit Synthesis. *Jean-Pierre Macquart & David L. Jauncey*. 572, 786 (2002)

## GALAXY: ABUNDANCES

Detailed Analysis of Nearby Bulgelike Dwarf Stars. II. Lithium Abundances. *Luciana Pompéia, Beatriz Barbay, Michel Grenon, & Bruno Vaz Castilho*. 570, 820 (2002)

Corotation: Its Influence on the Chemical Abundance Pattern of the Galaxy. *Yu N. Mishurov & J. R. D. Lépine*. 571, L113 (2002)

The Chemical Composition and Age of the Metal-poor Halo Star BD +17°3248. *John J. Cowan, Christopher Sneden, Scott Burles, Inese I. Ivans, Timothy C. Beers, James W. Truran, James E. Lawler, Francesca Primas, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz*. 572, 861 (2002)

**GALAXY: CENTER**

- Hydrocarbons, Ices, and "XCN" in the Line of Sight toward the Galactic Center. *J. E. Chiar, A. J. Adamson, Y. J. Pendleton, D. C. B. Whittet, D. A. Caldwell, & E. L. Gibb.* 570, 198 (2002)
- Detection of X-Ray Emission from the Arches Cluster near the Galactic Center. *F. Yusef-Zadeh, C. Law, M. Wardle, Q. D. Wang, A. Fruscione, C. C. Lang, & A. Cotera.* 570, 665 (2002)
- A *Chandra* Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center? *Y. Maeda, F. K. Baganoff, E. D. Feigelson, M. Morris, M. W. Bautz, W. N. Brandt, D. N. Burrows, J. P. Doty, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley.* 570, 671 (2002)
- Millisecond Pulsars as Probes of Mass Segregation in the Galactic Center. *Julio Chanamé & Andrew Gould.* 571, 320 (2002)
- The Spectrum and Variability of Circular Polarization in Sagittarius A from 1.4 to 15 GHz. *Geoffrey C. Bower, Heino Falcke, Robert J. Sault, & Donald C. Backer.* 571, 843 (2002)

**GALAXY: EVOLUTION**

- The Chemical Composition and Age of the Metal-poor Halo Star BD +17° 3248. *John J. Cowan, Christopher Sneden, Scott Burles, Inese I. Ivans, Timothy C. Beers, James W. Truran, James E. Lawler, Francesca Primas, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz.* 572, 861 (2002)

**GALAXY: GLOBULAR CLUSTERS: GENERAL**

- Mass Segregation in Globular Clusters. *J. M. Fregeau, K. J. Joshi, S. F. Portegies Zwart, & F. A. Rasio.* 570, 171 (2002)
- The Promiscuous Nature of Stars in Clusters. *Jarrod R. Hurley & Michael M. Shara.* 570, 184 (2002)
- Bright X-Ray Sources in M31 Globular Clusters. *R. Di Stefano, A. K. H. Kong, M. R. Garcia, P. Barmby, J. Greiner, S. S. Murray, & F. A. Primini.* 570, 618 (2002)
- The Case of PSR J1911-5958A in the Outskirts of NGC 6752: Signature of a Black Hole Binary in the Cluster Core? *Monica Colpi, Andrea Possenti, & Alessia Gualandris.* 570, L85 (2002)
- ISOCAM Observations of Galactic Globular Clusters: Mass Loss along the Red Giant Branch. *Livia Origlia, Francesco R. Ferraro, Flavio Fusi Pecci, & Robert T. Rood.* 571, 458 (2002)
- Models of Metal-poor Stars with Gravitational Settling and Radiative Accelerations. II. The Age of the Oldest Stars. *Don A. Vandenberg, O. Richard, G. Michaud, & J. Richer.* 571, 487 (2002)
- X-Ray Binaries and Globular Clusters in Elliptical Galaxies. *Raymond E. White III, Craig L. Sarazin, & Shrinivas R. Kulkarni.* 571, L23 (2002)
- Star Clusters as Type Ia Supernova Factories. *Michael M. Shara & Jarrod R. Hurley.* 571, 830 (2002)
- Rotation of Hot Horizontal Branch Stars in the Globular Clusters NGC 1904, NGC 2808, NGC 6093, and NGC 7078. *Alejandra Recio-Blanco, Giampaolo Piotto, Antonio Aparicio, & Alvio Renzini.* 572, L71 (2002)

**GALAXY: GLOBULAR CLUSTERS: INDIVIDUAL****NGC Number: NGC 6752**

- The Case of PSR J1911-5958A in the Outskirts of NGC 6752: Signature of a Black Hole Binary in the Cluster Core? *Monica Colpi, Andrea Possenti, & Alessia Gualandris.* 570, L85 (2002)
- Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian.* 570, L89 (2002)

**GALAXY: HALO**

- How Lumpy Is the Milky Way's Dark Matter Halo? *Kathryn V. Johnston, David N. Spergel, & Christian Haydn.* 570, 656 (2002)
- Experimental Constraints on the Axion Dark Matter Halo Density. *S. J. Asztalos, E. Daw, H. Peng, L. J. Rosenberg, D. B. Yu, C. Hagmann, D. Kinion, W. Stoeffl, K. van Bibber, J. LaVeigne, P. Sikivie, N. S. Sullivan, D. B. Tanner, F. Nezrick, & D. M. Moltz.* 571, L27 (2002)
- A Limit on the Metallicity of Compact High-Velocity Clouds. *Kenneth R. Sembach, Brad K. Gibson, Yeshe Fenner, & Mary E. Putman.* 572, 178 (2002)
- The Chemical Composition and Age of the Metal-poor Halo Star BD +17° 3248. *John J. Cowan, Christopher Sneden, Scott Burles, Inese I. Ivans, Timothy C. Beers, James W. Truran, James E. Lawler, Francesca Primas, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz.* 572, 861 (2002)

- WHAM Observations of H $\alpha$  From High-Velocity Clouds: Are they Galactic or Extragalactic? *S. L. Tufte, J. D. Wilson, G. J. Madsen, L. M. Haffner, & R. J. Reynolds.* 572, L153 (2002)

**GALAXY: KINEMATICS AND DYNAMICS**

- Kinematics of OB Stars. *Richard L. Branham, Jr.* 570, 190 (2002)
- The Parker Instability in Three Dimensions: Corrugations and Superclouds along the Carina-Sagittarius Arm. *José Franco, Jongsoo Kim, Emilio J. Alfaro, & Seung Soo Hong.* 570, 647 (2002)
- How Lumpy Is the Milky Way's Dark Matter Halo? *Kathryn V. Johnston, David N. Spergel, & Christian Haydn.* 570, 656 (2002)

**GALAXY: OPEN CLUSTERS AND ASSOCIATIONS: GENERAL**

- The Promiscuous Nature of Stars in Clusters. *Jarrod R. Hurley & Michael M. Shara.* 570, 184 (2002)
- Star Clusters as Type Ia Supernova Factories. *Michael M. Shara & Jarrod R. Hurley.* 571, 830 (2002)

**GALAXY: SOLAR NEIGHBORHOOD**

- A Determination of the Local Density of White Dwarf Stars. *J. B. Holberg, Terry D. Oswalt, & E. M. Sion.* 571, 512 (2002)

**GALAXY: STRUCTURE**

- The Parker Instability in Three Dimensions: Corrugations and Superclouds along the Carina-Sagittarius Arm. *José Franco, Jongsoo Kim, Emilio J. Alfaro, & Seung Soo Hong.* 570, 647 (2002)
- How Lumpy Is the Milky Way's Dark Matter Halo? *Kathryn V. Johnston, David N. Spergel, & Christian Haydn.* 570, 656 (2002)
- Corotation: Its Influence on the Chemical Abundance Pattern of the Galaxy. *Yu N. Mishurov & J. R. D. Lépine.* 571, L113 (2002)

**GAMMA RAYS: BURSTS**

- Short Gamma-Ray Bursts and Mergers of Compact Objects: Observational Constraints. *Rosalba Perna & Krzysztof Belczynski.* 570, 252 (2002)
- A Possible Origin of Lognormal Distributions in Gamma-Ray Bursts. *Kunihito Ioka & Takashi Nakamura.* 570, L21 (2002)
- Extended Power-Law Decays in BATSE Gamma-Ray Bursts: Signatures of External Shocks? *T. W. Giblin, V. Connaughton, J. van Paradijs, R. D. Preece, M. S. Briggs, C. Kouveliotou, R. A. M. J. Wijers, & G. J. Fishman.* 570, 572 (2002)
- Off-Axis Afterglow Emission from Jetted Gamma-Ray Bursts. *Jonathan Granot, Alin Panaitescu, Pawan Kumar, & Stan E. Woosley.* 570, L61 (2002)
- Study of Gamma-Ray Burst Binary Progenitors. *Krzysztof Belczynski, Tomasz Bulik, & Bronislaw Rudak.* 571, 394 (2002)
- X-Ray Flashes from Off-Axis Gamma-Ray Bursts. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 571, L31 (2002)
- Properties of Relativistic Jets in Gamma-Ray Burst Afterglows. *A. Panaitescu & P. Kumar.* 571, 779 (2002)
- Gamma-Ray Burst Beaming: A Universal Configuration with a Standard Energy Reservoir? *Bing Zhang & Peter Mészáros.* 571, 876 (2002)
- GRB 010921: Discovery of the First High Energy Transient Explorer Afterglow. *P. A. Price, S. R. Kulkarni, E. Berger, S. G. Djorgovski, D. A. Frail, A. Mahabal, D. W. Fox, F. A. Harrison, J. S. Bloom, S. A. Yost, D. E. Reichart, A. A. Henden, G. R. Ricker, R. van der Spek, K. Hurley, J. L. Atteia, N. Kawai, E. Fenimore, & C. Graziani.* 571, L121 (2002)
- GRB 010921: Localization and Observations by the High Energy Transient Explorer Satellite. *G. Ricker, K. Hurley, D. Lamb, S. Woosley, J. L. Atteia, N. Kawai, R. van der Spek, G. Crew, J. Doty, J. Villaseñor, G. Prigozhin, G. Monnelly, N. Butler, M. Matsuoka, Y. Shirasaki, T. Tamagawa, K. Torii, T. Sakamoto, A. Yoshida, E. Fenimore, M. Galassi, T. Tavenner, T. Donaghy, C. Graziani, M. Boer, J. P. Dezalay, M. Niel, J. F. Olive, G. Vedrenne, T. Cline, J. G. Jernigan, A. Levine, F. Martel, E. Morgan, J. Braga, R. Manchanda, G. Pizzichini, K. Takagishi, & M. Yamauchi.* 571, L127 (2002)
- LOTIS, Super-LOTIS, Sloan Digital Sky Survey, and Tautenburg Observations of GRB 010921. *H. S. Park, G. G. Williams, D. H. Hartmann, D. Q. Lamb, B. C. Lee, D. L. Tucker, S. Klose, B. Stecklum, A. Henden, J. Adelman, S. D. Barthelmy, J. W. Briggs, J. Brinkmann, B. Chen, T. Cline, I. Csabai, N. Gehrels, M. Harvanek, G. S. Hennessey, K. Hurley, Željko Ivezić, S. Kent, S. J. Kleinman, J. Krzesinski, K. Lindsay, D. Long, R. Nemiroff, E. H. Neilsen, A. Nitta, H. J. Newberg, P. R. Newman, D. Perez, W. Periera, D. P. Schneider, S. A. Snedden, C. Stoughton, D. E. Vanden Berk, D. York, & K. Ziock.* 571, L131 (2002)
- Merger Sites of Double Neutron Stars and their Host Galaxies. *Krzysztof Belczynski, Tomasz Bulik, & Vassiliki Kalogera.* 571, L147 (2002)

- Detection of a Supernova Signature Associated with GRB 011121. *J. S. Bloom, S. R. Kulkarni, P. A. Price, D. E. Reichart, T. J. Galama, B. P. Schmidt, D. A. Frail, E. Berger, P. J. McCarthy, R. A. Chevalier, J. C. Wheeler, J. P. Halpern, D. W. Fox, S. G. Djorgovski, F. A. Harrison, R. Sari, T. S. Axelrod, R. A. Kimble, J. Holtzman, K. Hurley, F. Frontera, L. Piro, & E. Costa.* 572, L45 (2002)
- GRB 01121: A Massive Star Progenitor. *P. A. Price, E. Berger, D. E. Reichart, S. R. Kulkarni, S. A. Yost, R. Subrahmanya, R. M. Wark, M. H. Wieringa, D. A. Frail, J. Bailey, B. Boyle, E. Corbett, K. Gunn, S. D. Ryder, N. Seymour, K. Koviak, P. McCarthy, M. Phillips, T. S. Axelrod, J. S. Bloom, S. G. Djorgovski, D. W. Fox, T. J. Galama, F. A. Harrison, K. Hurley, R. Sari, B. P. Schmidt, M. J. I. Brown, T. Cline, F. Frontera, C. Guidorzi, & E. Montanari.* 572, L51 (2002)
- Soft X-Ray Emission Lines in the Early Afterglow of Gamma-Ray Bursts. *Davide Lazzati, Enrico Ramirez-Ruiz, & Martin J. Rees.* 572, L57 (2002)
- The Type Ic Hypervelocity SN 2002ap. *P. A. Mazzali, J. Deng, K. Maeda, K. Nomoto, H. Umeda, K. Hatano, K. Iwamoto, Y. Yoshii, Y. Kobayashi, T. Minezaki, M. Doi, K. Enya, H. Tomita, S. J. Smartt, K. Kingutsu, H. Kawakita, K. Arai, T. Kawabata, H. Yamaoka, Y. L. Qiu, K. Motohara, C. L. Gerardi, R. Fesen, K. S. Kawabata, M. Iye, N. Kashikawa, G. Kosugi, Y. Ohyama, M. Takada-Hidai, G. Zhao, R. Chornock, A. V. Filippenko, S. Benetti, & M. Turatto.* 572, L61 (2002)
- Gamma-Ray Burst Light Curves—Another Clue on the Inner Edge. *E. Nakar & T. Piran.* 572, L139 (2002)
- Is There a 1998bw-like Supernova in the Afterglow of Gamma-Ray Burst 011121? *Shlomo Dado, Arnon Dar, & A. De Rújula.* 572, L143 (2002)
- On the Progenitor of the Type Ic Supernova 2002ap. *S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen.* 572, L147 (2002)
- ### GAMMA RAYS: OBSERVATIONS
- Detection of the BL Lacertae Object H1426+428 at TeV Gamma-Ray Energies. *D. Horan, H. M. Badran, I. H. Bond, S. M. Bradbury, J. H. Buckley, M. J. Carson, D. A. Carter-Lewis, M. Catanese, W. Cui, S. Dunlea, D. Das, I. de la Calle Perez, M. D'Vali, D. J. Fegan, S. J. Fegan, J. P. Finley, J. A. Gaidos, K. Gibbs, G. H. Gillanders, T. A. Hall, A. M. Hillas, J. Holder, M. Jordan, M. Kertzman, D. Kieda, J. Kildea, J. Knapp, K. Kosack, F. Krennrich, M. J. Lang, S. LeBohec, R. Lessard, J. Lloyd-Evans, B. McKernan, P. Moriarty, D. Muller, R. Ong, R. Pallascini, D. Petry, J. Quinn, N. W. Reay, P. T. Reynolds, H. J. Rose, G. H. Sembroski, R. Sidwell, N. Stanton, S. P. Swordy, V. V. Vassiliev, S. P. Wakely, & T. C. Weekes.* 571, 753 (2002)
- Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment. *K. Shinozaki, M. Chikawa, M. Fukushima, N. Hayashida, N. Inoue, K. Honda, K. Kadota, F. Kakimoto, K. Kamata, S. Kawaguchi, S. Kawakami, Y. Kawasaki, N. Kawasumi, A. M. Mahrous, K. Mase, S. Mizobuchi, Y. Morizane, N. Nagano, H. Ohoka, S. Osone, N. Sakaki, N. Sakurai, M. Sasaki, M. Sasano, M. Takeda, M. Teshima, I. Tsumura, R. Torii, Y. Uchihori, R. A. Vázquez, T. Yamamoto, S. Yoshida, & H. Yoshii.* 571, L117 (2002)
- The Soft Gamma-Ray Spectral Variability of Cygnus X-1. *M. L. McConnell, A. A. Zdziarski, K. Bennett, H. Bloemen, W. Collmar, W. Hermsen, L. Kuiper, W. Paciesas, B. F. Philips, J. Poutanen, J. M. Ryan, V. Schönfelder, H. Steinle, & A. W. Strong.* 572, 984 (2002)
- ### GAMMA RAYS: THEORY
- A Possible Origin of Lognormal Distributions in Gamma-Ray Bursts. *Kunihito Ioka & Takashi Nakamura.* 570, L21 (2002)
- X-Ray Flashes from Off-Axis Gamma-Ray Bursts. *Ryo Yamazaki, Kunihito Ioka, & Takashi Nakamura.* 571, L31 (2002)
- Photo Splitting in the Superstrong Magnetic Fields of Pulsars. *Vladimir V. Usov.* 572, L87 (2002)
- ### GRAVITATION
- Numerical Models of Binary Neutron Star System Mergers. II. Coalescing Models with Post-Newtonian Radiation Reaction Forces. *Alan C. Calder & Edward Y. M. Wang.* 570, 303 (2002)
- Statistical Mechanics of the Cosmological Many-Body Problem. *Farooq Ahmad, William C. Saslaw, & Naseer Iqbal Bhat.* 571, 576 (2002)
- Correcting Parameters of Events Based on the Entropy of Microlensing Ensemble. *Piotr Popowski & Charles Alcock.* 572, 514 (2002)
- Technique for Modeling the Gravitational Field of a Galactic Disk. *Donald H. Eckhardt & José Luis G. Pestaña.* 572, L135 (2002)
- ### GRAVITATIONAL LENSING
- Light Propagation in Inhomogeneous Universes. III. Distributions of Image Separations. *Hugo Martel, Premana Premadi, & Richard Matzner.* 570, 17 (2002)
- The Gravitational Lens CFRS 03.1077. *David Crampton, David Schade, F. Hammer, A. Matzkin, S. J. Lilly, & O. Le Fèvre.* 570, 86 (2002)
- Shape Reconstruction and Weak Lensing Measurement with Interferometers: A Shapelet Approach. *Tzu-Ching Chang & Alexandre Refregier.* 570, 447 (2002)
- Detecting Gravitational Lensing Cosmic Shear from Samples of Several Galaxies Using Two-Dimensional Spectral Imaging. *A. W. Blain.* 570, L51 (2002)
- Lognormal Property of Weak-Lensing Fields. *Atsushi Taruya, Masahiro Takada, Takashi Hamana, Issha Kayo, & Toshifumi Futamase.* 571, 638 (2002)
- A Submillimeter Survey of Gravitationally Lensed Quasars. *Richard Barvainis & Rob Ivison.* 571, 712 (2002)
- Chandra Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens? *Paul J. Green, Chris Kochanek, Aneta Siemiginowska, Dong-Woo Kim, Maxim Markevitch, John Silverman, Anil Dosaj, Buell T. Jannuzi, & Chris Smith.* 571, 721 (2002)
- Direct Detection of Cold Dark Matter Substructure. *N. Dalal & C. S. Kochanek.* 572, 25 (2002)
- A Measurement of Weak Lensing by Large-Scale Structure in Red-Sequence Cluster Survey Fields. *Henk Hoekstra, Howard K. C. Yee, Michael D. Gladders, L. Felipe Barrientos, Patrick B. Hall, & Leopoldo Infante.* 572, 55 (2002)
- Correcting Parameters of Events Based on the Entropy of Microlensing Ensemble. *Piotr Popowski & Charles Alcock.* 572, 514 (2002)
- First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5. *Jin H. An, M. D. Albrow, J.-P. Beaulieu, J. A. R. Caldwell, D. L. DePoy, M. Dominik, B. S. Gaudi, A. Gould, J. Greenhill, K. Hill, S. Kane, R. Martin, J. Menzies, R. W. Pogge, K. R. Pollard, P. D. Sackett, K. C. Sahu, P. Vermaak, R. Watson, & A. Williams.* 572, 521 (2002)
- Atmospheric Lensing and Oblateness Effects during an Extrasolar Planetary Transit. *Lam Hui & Sara Seager.* 572, 540 (2002)
- The Time Delay of the Quadruple Quasar RX J0911.4+0551. *Jens Hjorth, Ingunn Burud, Andreas O. Jaunsen, Paul L. Schechter, Jean-Paul Kneib, Michael I. Andersen, Heidi Korhonen, Jacob W. Clasen, A. Amanda Kaas, Roy Vistensen, Jaan Pelt, & Frank J. Pijpers.* 572, L11 (2002)
- A Universal Probability Distribution Function for Weak-lensing Amplification. *Yun Wang, Daniel E. Holz, & Dipak Munshi.* 572, L15 (2002)
- QSO 2237+0305 VR Light from Gravitational Lenses International Time Project Optical Monitoring. *D. Alcalde, E. Mediavilla, O. Moreau, J. A. Muñoz, C. Libbrecht, L. J. Goicoechea, J. Surdej, E. Puga, Y. De Rop, R. Barrena, R. Gil-Merino, B. A. McLeod, V. Motta, A. Oscoz, & M. Serra-Ricart.* 572, 729 (2002)
- A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47. *M. D. Albrow, J. An, J.-P. Beaulieu, J. A. R. Caldwell, D. L. DePoy, M. Dominik, B. S. Gaudi, A. Gould, J. Greenhill, K. Hill, S. Kane, R. Martin, J. Menzies, R. W. Pogge, K. R. Pollard, P. D. Sackett, K. C. Sahu, P. Vermaak, R. Watson, & A. Williams (The PLANET Collaboration).* 572, 1031 (2002)
- Cosmic Shear and Power Spectrum Normalization with the Hubble Space Telescope. *Alexandre Refregier, Jason Rhodes, & Edward J. Groth.* 572, L131 (2002)
- ### GRAVITATIONAL WAVES
- Numerical Models of Binary Neutron Star System Mergers. II. Coalescing Models with Post-Newtonian Radiation Reaction Forces. *Alan C. Calder & Edward Y. M. Wang.* 570, 303 (2002)
- A Comprehensive Study of Binary Compact Objects as Gravitational Wave Sources: Evolutionary Channels, Rates, and Physical Properties. *Krzysztof Belczynski, Vassiliki Kalogera, & Tomasz Bulik.* 572, 407 (2002)
- Nova Scorpii and Coalescing Low-Mass Black Hole Binaries as LIGO Sources. *Michael S. Sipior & Steinn Sigurdsson.* 572, 962 (2002)
- ### HYDRODYNAMICS
- Numerical Models of Binary Neutron Star System Mergers. II. Coalescing Models with Post-Newtonian Radiation Reaction Forces. *Alan C. Calder & Edward Y. M. Wang.* 570, 303 (2002)
- Turbulent Convection under the Influence of Rotation: Sustaining a Strong Differential Rotation. *Allan Sacha Brun & Juri Toomre.* 570, 865 (2002)



- Early Metal Enrichment by Pregalactic Outflows. II. Three-dimensional Simulations of Blow-Away. *Masao Mori, Andrea Ferrara, & Piero Madau.* 571, 40 (2002)
- From Penetrative Convection to Teleconvection. *Keke Zhang & Gerald Schubert.* 572, 461 (2002)
- Dynamic Hydrogen Ionization. *Mats Carlsson & R. F. Stein.* 572, 626 (2002)
- Energy Balance in the Solar Transition Region. IV. Hydrogen and Helium Mass Flows with Diffusion. *J. M. Fontenla, E. H. Avrett, & R. Loeser.* 572, 636 (2002)
- Turbulent Time Correlations and Generation of Acoustic Waves by Stellar or Solar Turbulent Convection. *Robert Rubinstein & Ye Zhou.* 572, 674 (2002)
- Collapse of a Rotating Supermassive Star to a Supermassive Black Hole: Fully Relativistic Simulations. *Masaru Shibata & Stuart L. Shapiro.* 572, L39 (2002)
- Three-dimensional Hydrodynamic Simulations of Relativistic Extragalactic Jets. *Philip A. Hughes, Mark A. Miller, & G. Comer Duncan.* 572, 713 (2002)
- INFRARED: GALAXIES**
- The Las Campanas Infrared Survey. III. The *H*-Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs. *Hsiao-Wen Chen, P. J. McCarthy, R. O. Marzke, J. Wilson, R. G. Carlberg, A. E. Firth, S. E. Persson, C. N. Sabbey, J. R. Lewis, R. G. McMahon, O. Lahav, R. S. Ellis, P. Martini, R. G. Abraham, A. Oemler, D. C. Murphy, R. S. Somerville, M. G. Beckett, & C. D. Mackay.* 570, 54 (2002)
- A Bridge from Optical to Infrared Galaxies: Explaining Local Properties and Predicting Galaxy Counts and the Cosmic Background Radiation. *Tomonori Totani & Tsutomu T. Takeuchi.* 570, 470 (2002)
- Star Formation Rate From Dust Infrared Emission. *Akio K. Inoue.* 570, L97 (2002)
- Resolving the Buried Starburst in Arp 299. *V. Charmandaris, G. J. Stacey, & G. Gull.* 571, 282 (2002)
- The Origin of Far-Infrared [C II] Emission in the Large Magellanic Cloud. *Sungeun Kim & William T. Reach.* 571, 288 (2002)
- Subarcsecond Emission in Seyfert Galaxies: The Nuclear Component in the *L* and *M* Bands. *M. A. Prieto, J. Reunanen, & J. K. Kotilainen.* 571, L7 (2002)
- The Far-Infrared Energy Distributions of Seyfert and Starburst Galaxies in the Local Universe: *Infrared Space Observatory* Photometry of the 12 Micron Active Galaxy Sample. *Luigi Spinoglio, Paola Andreani, & Matthew A. Malkan.* 572, 105 (2002)
- INFRARED: ISM**
- Hydrocarbons, Ices, and "XCN" in the Line of Sight toward the Galactic Center. *J. E. Chiar, A. J. Adamson, Y. J. Pendleton, D. C. B. Whittet, D. A. Caldwell, & E. L. Gibb.* 570, 198 (2002)
- Spatial Distribution of Dust Grains within H II Regions. *Akio K. Inoue.* 570, 688 (2002)
- The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte.* 570, 708 (2002)
- Do the Infrared Emission Features Need Ultraviolet Excitation? The Polycyclic Aromatic Hydrocarbon Model in UV-poor Reflection Nebulae. *Aigen Li & B. T. Draine.* 572, 232 (2002)
- INFRARED: STARS**
- Hydrocarbons, Ices, and "XCN" in the Line of Sight toward the Galactic Center. *J. E. Chiar, A. J. Adamson, Y. J. Pendleton, D. C. B. Whittet, D. A. Caldwell, & E. L. Gibb.* 570, 198 (2002)
- Time-dependent Asymmetries in the Atmosphere of the Mira Variable R Trianguli through Infrared Interferometry. *R. R. Thompson, M. J. Creech-Eakman, & R. L. Akeson.* 570, 373 (2002)
- Candidate Pre-Main-Sequence F Stars with Circumstellar Dust Identified Using Combined 2MASS and *uvby* Data. *A. A. Suchkov, A. B. Schultz, & C. M. Lisse.* 570, L29 (2002)
- Discovery of an Extremely Red Object in the Field of HD 155826. *C. Lisse, A. Schultz, Y. Fernandez, S. Pecsckhe, M. Ressler, V. Gorjian, S. G. Djorgovski, D. J. Christian, B. Golisch, & C. Kaminski.* 570, 779 (2002)
- Infrared Photometric Variability of GX 13+1 and GX 17+2. *Reba M. Bandyopadhyay, Philip A. Charles, Tariq Shahbaz, & R. Mark Wagner.* 570, 793 (2002)
- Mid-Infrared Observation of Mass Loss in Elliptical Galaxies. *Alex Atthey, Joel Bregman, Jesse Bregman, Pasquale Temi, & Marc Sauvage.* 571, 272 (2002)
- ISOCAM Observations of Galactic Globular Clusters: Mass Loss along the Red Giant Branch. *Livia Origlia, Francesco R. Ferraro, Flavio Fusi Pecci, & Robert T. Rood.* 571, 458 (2002)
- Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. *Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler.* 571, 519 (2002)
- Hubble Space Telescope*/NICMOS Observations of Terzan 5: Stellar Content and Structure of the Core. *Haldan N. Cohn, Phyllis M. Luger, Jonathan E. Grindlay, & Peter D. Edmonds.* 571, 818 (2002)
- Evidence of Cloud Disruption in the L/T Dwarf Transition. *Adam J. Burgasser, Mark S. Marley, Andrew S. Ackerman, Didier Saumon, Katharina Lodders, Conrad C. Dahn, Hugh C. Harris, & J. Davy Kirkpatrick.* 571, L151 (2002)
- A Young Very Low Mass Object Surrounded by Warm Dust. *L. Testi, A. Natta, E. Oliva, F. D'Antona, F. Comerón, C. Baffa, G. Comoretto, & S. Gennari.* 571, L155 (2002)
- An Infrared Ring Nebula around MSX5C G358.5391+00.1305: The True Nature of Suspected Planetary Nebula Wray 17-96 Determined via Direct Imaging and Spectroscopy. *Michael P. Egan, J. Simon Clark, Donald R. Mizuno, Sean J. Carey, Iain A. Steele, & Stephan D. Price.* 572, 288 (2002)
- Looking for Pure Rotational H<sub>2</sub> Emission from Protoplanetary Disks. *Matthew J. Richter, Daniel T. Jaffe, Geoffrey A. Blake, & John H. Lacy.* 572, L161 (2002)
- INSTABILITIES**
- Formation and Fragmentation of Gaseous Spurs in Spiral Galaxies. *Woong-Tae Kim & Eve C. Ostriker.* 570, 132 (2002)
- The Effect of the Hall Term on the Nonlinear Evolution of the Magnetorotational Instability. I. Local Axisymmetric Simulations. *Takayoshi Sano & James M. Stone.* 570, 314 (2002)
- Three-dimensional Magnetohydrodynamic Simulations of an Accretion Disk with Star-Disk Boundary Layer. *Adriane Steinacker & John C. B. Papaloizou.* 571, 413 (2002)
- Nonlinear Couplings between *r*-Modes of Rotating Neutron Stars. *Sharon M. Morsink.* 571, 435 (2002)
- From Penetrative Convection to Teleconvection. *Keke Zhang & Gerald Schubert.* 572, 461 (2002)
- INSTRUMENTATION: ADAPTIVE OPTICS**
- A Coronagraph with a Band-limited Mask for Finding Terrestrial Planets. *Marc J. Kuchner & Wesley A. Traub.* 570, 900 (2002)
- INSTRUMENTATION: DETECTORS**
- Discovering Ultra-High-Energy Neutrinos through Horizontal and Upward  $\tau$  Air Showers: Evidence in Terrestrial Gamma Flashes? *D. Fargion.* 570, 909 (2002)
- Experimental Constraints on the Axion Dark Matter Halo Density. *S. J. Asztalos, E. Daw, H. Peng, L. J. Rosenberg, D. B. Yu, C. Hagmann, D. Kinion, W. Stoeffl, K. van Bibber, J. LaVeigne, P. Sikivie, N. S. Sullivan, D. B. Tanner, F. Nezrick, & D. M. Moltz.* 571, L27 (2002)
- INSTRUMENTATION: INTERFEROMETERS**
- Fixed Delay Interferometry for Doppler Extrasolar Planet Detection. *Jian Ge.* 571, L165 (2002)
- INSTRUMENTATION: MISCELLANEOUS**
- First High-Contrast Imaging Using a Gaussian Aperture Pupil Mask. *John H. Debes, Jian Ge, & Abhijit Chakraborty.* 572, L165 (2002)
- INTERPLANETARY MEDIUM**
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. I. Results. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore.* 571, 56 (2002)
- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. II. Measurement of Foreground Zodiacal Light. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore.* 571, 85 (2002)
- First Detection of an Optical Dust Trail along the Orbit of 22P/Kopff. *M. Ishiguro, J. Watanabe, F. Usui, T. Tanigawa, D. Kinoshita, J. Suzuki, R. Nakamura, M. Ueno, & T. Mukai.* 572, L117 (2002)
- Evolution of Anomalous Cosmic-Ray Oxygen and Helium Energy Spectra during the Solar Cycle 22 Recovery Phase in the Outer Heliosphere. *M. E. Hill, D. C. Hamilton, & S. M. Krimigis.* 572, L169 (2002)

# ISM: ABUNDANCES

- $N_2H^+$  and  $C^{18}$  Depletion in a Cold Dark Cloud. *Edwin A. Bergin, João Alves, Tracy Huard, & Charles J. Lada.* 570, L101 (2002)
- Galactic Cosmic Rays from Superbubbles and the Abundances of Lithium, Beryllium, and Boron. *Andreu Alibés, Javier Labay, & Ramon Canal.* 571, 326 (2002)
- Detection of Triply Deuterated Ammonia in the Barabard I Cloud. *D. C. Lis, E. Roueff, M. Gerin, T. G. Phillips, L. H. Coudert, F. F. S. van der Tak, & P. Shilke.* 571, L55 (2002)
- Interstellar Antifreeze: Ethylene Glycol. *J. M. Hollis, F. J. Lovas, P. R. Jewell, & L. H. Coudert.* 571, L59 (2002)
- Hydrogen Column Density Evaluations toward Capella: Consequences on the Interstellar Deuterium Abundance. *A. Vidal-Madjar & R. Ferlet.* 571, L169 (2002)
- A Limit on the Metallicity of Compact High-Velocity Clouds. *Kenneth R. Sembach, Brad K. Gibson, Yeshe Fenner, & Mary E. Putman.* 572, 178 (2002)
- CO Isotopes in Planetary Nebulae. *Dana S. Balser, Joseph P. McMullin, & T. L. Wilson.* 572, 326 (2002)
- High-Resolution Measurements of Intersystem Bands of Carbon Monoxide toward X Persei. *Yaron Sheffer, S. R. Federman, & David L. Lambert.* 572, L95 (2002)
- Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Otte, J. S. Gallagher III, & R. J. Reynolds.* 572, 823 (2002)

# ISM: ATOMS

- Far-Ultraviolet Spectroscopic Explorer Observations of Degree-Scale Variations in Galactic Halo O VI. *J. Christopher Howk, Blair D. Savage, Kenneth R. Sembach, & Charles G. Hoopes.* 572, 264 (2002)

# ISM: CLOUDS

- The Scale-dependent Energy Transfer Rate as a Tracer for Star Formation in Cosmological N-Body Simulations. *M. Hoeft, J. P. Mücke, & P. Heide.* 570, 33 (2002)
- Enhancement of Ambipolar Diffusion Rates through Field Fluctuations. *Marco Fatuzzo & Fred C. Adams.* 570, 210 (2002)
- Gaussian Spectral Line Profiles of Astrophysical Masers. *W. D. Watson, A. P. Sarma, & M. S. Singleton.* 570, L37 (2002)
- The Parker Instability in Three Dimensions: Corrugations and Superclouds along the Carina-Sagittarius Arm. *José Franco, Jongsoo Kim, Emilio J. Alfaro, & Seung Soo Hong.* 570, 647 (2002)
- Physical versus Observational Properties of Clouds in Turbulent Molecular Cloud Models. *Javier Ballesteros-Parades & Mordecai-Mark Mac Low.* 570, 734 (2002)
- $N_2H^+$  and  $C^{18}$  Depletion in a Cold Dark Cloud. *Edwin A. Bergin, João Alves, Tracy Huard, & Charles J. Lada.* 570, L101 (2002)
- Velocity Structure of the Interstellar Medium as Seen by the Spectral Correlation Function. *Javier Ballesteros-Parades, Enrique Vázquez-Semadeni, & Alyssa A. Goodman.* 571, 334 (2002)
- Magnetic Fields in Star-forming Molecular Clouds. IV. Polarimetry of the Filamentary NGC 2068 Cloud in Orion B. *Brenda C. Matthews & Christine D. Wilson.* 571, 356 (2002)
- Interstellar Antifreeze: Ethylene Glycol. *J. M. Hollis, F. J. Lovas, P. R. Jewell, & L. H. Coudert.* 571, L59 (2002)
- A Limit on the Metallicity of Compact High-Velocity Clouds. *Kenneth R. Sembach, Brad K. Gibson, Yeshe Fenner, & Mary E. Putman.* 572, 178 (2002)
- Dense Cores in Dark Clouds. XIV.  $N_2H^+$  (1-0) Maps of Dense Cloud Cores. *Paola Caselli, Priscilla J. Benson, Philip C. Myers, & Mario Tafalla.* 572, 238 (2002)
- WHAM Observations of  $H\alpha$  From High-Velocity Clouds: Are they Galactic or Extragalactic? *S. L. Tufte, J. D. Wilson, G. J. Madsen, L. M. Haffner, & R. J. Reynolds.* 572, L153 (2002)

# ISM: COSMIC RAYS

- Discovering Ultra-High-Energy Neutrinos through Horizontal and Upward  $\tau$  Air Showers: Evidence in Terrestrial Gamma Flashes? *D. Fargion.* 570, 909 (2002)
- Galactic Cosmic Rays from Superbubbles and the Abundances of Lithium, Beryllium, and Boron. *Andreu Alibés, Javier Labay, & Ramon Canal.* 571, 326 (2002)
- On the Possible Reason for Nondetection of TeV Protons in Supernova Remnants. *M. A. Malkov, P. H. Diamond, & T. W. Jones.* 571, 856 (2002)

- ASCA View of the Supernova Remnant  $\gamma$  Cygni (G78.2+2.1): Bremsstrahlung X-Ray Spectrum from Loss-flattened Electron Distribution. *Y. Uchiyama, T. Takahashi, F. A. Aharonian, & J. R. Mattox.* 571, 866 (2002)

- Upper Limit on Gamma-Ray Flux above  $10^{19}$  eV Estimated by the Akeno Giant Air Shower Array Experiment. *K. Shinzaki, M. Chikawa, M. Fukushima, N. Hayashida, N. Inoue, K. Honda, K. Kadota, F. Kakimoto, K. Kamata, S. Kawaguchi, S. Kawakami, Y. Kawasaki, N. Kawasumi, A. M. Mahrous, K. Mase, S. Mizobuchi, Y. Morizane, N. Nagano, H. Ohoka, S. Osone, N. Sakaki, N. Sakurai, M. Sasaki, M. Sasano, M. Takeda, M. Teshima, I. Tsushima, R. Torii, Y. Uchihori, R. A. Vázquez, T. Yamamoto, S. Yoshida, & H. Yoshii.* 571, L117 (2002)

- Ultrahigh-Energy Cosmic-Ray Propagation in the Galaxy: Clustering versus Isotropy. *Jaime Alvarez-Muñiz, Ralph Engel, & Todor Stanev.* 572, 185 (2002)

- Emission of Positron Annihilation Line Radiation by Clusters of Galaxies. *Steven R. Furlanetto & Abraham Loeb.* 572, 796 (2002)

- Nonthermal Electrons at High Mach Number Shocks: Electron Shock Suffering Acceleration. *M. Hoshino & N. Shimada.* 572, 880 (2002)

- The Cosmic-Ray Luminosity of the Galaxy. *V. A. Dogiel, V. Schönfelder, & A. W. Strong.* 572, L157 (2002)

- Evolution of Anomalous Cosmic-Ray Oxygen and Helium Energy Spectra during the Solar Cycle 22 Recovery Phase in the Outer Heliosphere. *M. E. Hill, D. C. Hamilton, & S. M. Krimigis.* 572, L169 (2002)

# ISM: DUST, EXTINCTION

- Hydrocarbons, Ices, and "XCN" in the Line of Sight toward the Galactic Center. *J. E. Chiar, A. J. Adamson, Y. J. Pendleton, D. C. B. Whitt, D. A. Caldwell, & E. L. Gibb.* 570, 198 (2002)

- Dust Emission from Active Galactic Nuclei. *Maia Nenkova, Željko Ivezić, & Moshe Elitzur.* 570, L9 (2002)

- Spatial Distribution of Dust Grains within H II Regions. *Akio K. Inoue.* 570, 688 (2002)

- The Local Interstellar Ultraviolet Radiation Field. *Richard Conn Henry.* 570, 697 (2002)

- The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte.* 570, 708 (2002)

- Star Formation Rate From Dust Infrared Emission. *Akio K. Inoue.* 570, L97 (2002)

- $N_2H^+$  and  $C^{18}$  Depletion in a Cold Dark Cloud. *Edwin A. Bergin, João Alves, Tracy Huard, & Charles J. Lada.* 570, L101 (2002)

- The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. I. Results. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore.* 571, 56 (2002)

- Resolving the Buried Starburst in Arp 299. *V. Charmandaris, G. J. Stacey, & G. Gull.* 571, 282 (2002)

- The Inner Scale Length of Spiral Galaxy Rotation Curves. *Riccardo Giovanelli & Martha P. Haynes.* 571, L107 (2002)

- Efficient Formation of Formaldehyde and Methanol by the Addition of Hydrogen Atom to CO in  $H_2O$ -CO Ice at 10 K. *Naoki Watanabe & Akira Kouchi.* 571, L173 (2002)

- Do the Infrared Emission Features Need Ultraviolet Excitation? The Polycyclic Aromatic Hydrocarbon Model in UV-poor Reflection Nebulae. *Aigen Li & B. T. Draine.* 572, 232 (2002)

- Imaging and Spatially Resolved Spectroscopy of AFGL 2688 in the Thermal Infrared Region. *Miwa Goto, Naoto Kobayashi, Hiroshi Terada, & A. T. Tokunaga.* 572, 276 (2002)

# ISM: GENERAL

- Are the Narrow-Line Regions in Active Galaxies Dusty and Radiation Pressure Dominated? *Michael A. Dopita, Brent A. Groves, Ralph S. Sutherland, Luc Binette, & Gerald Cecil.* 572, 753 (2002)

- Emission-Line Ratios and Variations in Temperature and Ionization State in the Diffuse Ionized Gas of Five Edge-on Galaxies. *B. Otte, J. S. Gallagher III, & R. J. Reynolds.* 572, 823 (2002)

# ISM: H II REGIONS

- MERLIN Radio Detection of an Interaction Zone within a Binary Orion Proplyd System. *M. F. Graham, J. Meaburn, S. T. Garrington, T. J. O'Brien, W. J. Henney, & C. R. O'Dell.* 570, 222 (2002)

- Spatial Distribution of Dust Grains within H II Regions. *Akio K. Inoue.* 570, 688 (2002)

- Embedded Star Formation in the Eagle Nebula. *Rodger I. Thompson, Bradford A. Smith, & J. Jeff Hester.* 570, 749 (2002)

Australia Telescope Compact Array Radio Imaging of the Proplyd-like Objects in the Giant H II Region NGC 3603. *A. Mücke, B. S. Koribalski, A. F. J. Moffat, M. F. Corcoran, & I. R. Stevens.* 571, 366 (2002)

The Nature of the Cluster of Radio Sources in GGD 14. *Y. Gómez, L. F. Rodríguez, & G. Garay.* 571, 901 (2002)

Optical Spectroscopy of Metal-rich H II Regions and Circumstellar Hot Spots in M83 and NGC 3351. *Fabio Bresolin & Robert C. Kennicutt, Jr.* 572, 838 (2002)

## ISM: INDIVIDUAL

### Name: Barnard 1

Detection of Triply Deuterated Ammonia in the Barnard 1 Cloud. *D. C. Lis, E. Roueff, M. Gerin, T. G. Phillips, L. H. Coudert, F. F. S. van der Tak, & P. Shilke.* 571, L55 (2002)

### Name: Orion Nebula

MERLIN Radio Detection of an Interaction Zone within a Binary Orion Proplyd System. *M. F. Graham, J. Meaburn, S. T. Garrington, T. J. O'Brien, W. J. Henney, & C. R. O'Dell.* 570, 222 (2002)

### Name: Sagittarius A East

A Chandra Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center? *Y. Maeda, F. K. Baganoff, E. D. Feigelson, M. Morris, M. W. Bautz, W. N. Brandt, D. N. Burrows, J. P. Doty, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley.* 570, 671 (2002)

### Name: Sagittarius B2(N-LMH)

Interstellar Antifreeze: Ethylene Glycol. *J. M. Hollis, F. J. Lovas, P. R. Jewell, & L. H. Coudert.* 571, L59 (2002)

### NGC Number: NGC 3603

Australia Telescope Compact Array Radio Imaging of the Proplyd-like Objects in the Giant H II Region NGC 3603. *A. Mücke, B. S. Koribalski, A. F. J. Moffat, M. F. Corcoran, & I. R. Stevens.* 571, 366 (2002)

### Alphanumeric: B68

N<sub>2</sub>H<sup>+</sup> and C<sup>18</sup> Depletion in a Cold Dark Cloud. *Edwin A. Bergin, João Alves, Tracy Huard, & Charles J. Lada.* 570, L101 (2002)

### Alphanumeric: 3C 58

Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope. *F. Camilo, I. H. Stairs, D. R. Lorimer, D. C. Backer, S. M. Ransom, B. Klein, R. Wielebinski, M. Kramer, M. A. McLaughlin, Z. Arzoumanian, & P. Muller.* 571, L41 (2002)

New Constraints on Neutron Star Cooling from Chandra Observations of 3C 58. *Patrick O. Slane, David J. Helfand, & Stephen S. Murray.* 571, L45 (2002)

### Alphanumeric: GGD 12-15

The Nature of the Cluster of Radio Sources in GGD 14. *Y. Gómez, L. F. Rodríguez, & G. Garay.* 571, 901 (2002)

### Alphanumeric: HH 43

Understanding the Nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43. *Teresa Giannini, Brunella Nisini, Alessio Caratti o Garatti, & Dario Lorenzetti.* 570, L33 (2002)

### Alphanumeric: HH 154

Velocity-resolved [Fe II] Line Spectroscopy of L1551 IRS 5: A Partially Ionized Wind under Collimation around an Ionized Fast Jet. *Tae-Soo Pyo, Masahiko Hayashi, Naoto Kobayashi, Hiroshi Terada, Miwa Goto, Takuya Yamashita, Alan T. Tokunaga, & Yoichi Itoh.* 570, 724 (2002)

### Alphanumeric: IC 443

ASCA Observations of the Supernova Remnant IC 443: Thermal Structure and Detection of Overionized Plasma. *Masahiro T. Kawasaki, Masanobu Ozaki, Fumiaki Nagase, Kuniaki Masai, Manabu Ishida, & Robert Petre.* 572, 897 (2002)

### Alphanumeric: L1551

Velocity-resolved [Fe II] Line Spectroscopy of L1551 IRS 5: A Partially Ionized Wind under Collimation around an Ionized Fast Jet. *Tae-Soo Pyo, Masahiko Hayashi, Naoto Kobayashi, Hiroshi Terada, Miwa Goto, Takuya Yamashita, Alan T. Tokunaga, & Yoichi Itoh.* 570, 724 (2002)

### Alphanumeric: M16

Embedded Star Formation in the Eagle Nebula. *Rodger I. Thompson, Bradford A. Smith, & J. Jeff Hester.* 570, 749 (2002)

### Alphanumeric: SN 1006

The Optical Spectrum of the SN 1006 Supernova Remnant Revisited. *Parviz Ghavamian, P. Frank Winkler, John C. Raymond, & Knox S. Long.* 572, 888 (2002)

### Alphanumeric: vdB 133

Do the Infrared Emission Features Need Ultraviolet Excitation? The Polycyclic Aromatic Hydrocarbon Model in UV-poor Reflection Nebulae. *Aigen Li & B. T. Draine.* 572, 232 (2002)

## ISM: JETS AND OUTFLOWS

Understanding the Nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43. *Teresa Giannini, Brunella Nisini, Alessio Caratti o Garatti, & Dario Lorenzetti.* 570, L33 (2002)

Gaussian Spectral Line Profiles of Astrophysical Masers. *W. D. Watson, A. P. Sarma, & M. S. Singleton.* 570, L37 (2002)

Keck Absorption-Line Spectroscopy of Galactic Winds in Ultraluminous Infrared Galaxies. *David S. Rupke, Sylvain Veilleux, & D. B. Sanders.* 570, 588 (2002)

Velocity-resolved [Fe II] Line Spectroscopy of L1551 IRS 5: A Partially Ionized Wind under Collimation around an Ionized Fast Jet. *Tae-Soo Pyo, Masahiko Hayashi, Naoto Kobayashi, Hiroshi Terada, Miwa Goto, Takuya Yamashita, Alan T. Tokunaga, & Yoichi Itoh.* 570, 724 (2002)

The Formation of Massive Stars. I. High-Resolution Millimeter and Radio Studies of High-Mass Protostellar Candidates. *Sergio Molinari, Leonardo Testi, Luis F. Rodríguez, & Qizhou Zhang.* 570, 758 (2002)

Off-Axis Afterglow Emission from Jetted Gamma-Ray Bursts. *Jonathan Granot, Alin Panaitescu, Pawan Kumar, & Stan E. Woosley.* 570, L61 (2002)

Gamma-Ray Burst Beaming: A Universal Configuration with a Standard Energy Reservoir? *Bing Zhang & Peter Mészáros.* 571, 876 (2002)

The Nature of the Cluster of Radio Sources in GGD 14. *Y. Gómez, L. F. Rodríguez, & G. Garay.* 571, 901 (2002)

Flux-Velocity Relation for H<sub>2</sub> Outflows. *Luis Salas & Irene Cruz-González.* 572, 227 (2002)

## ISM: KINEMATICS AND DYNAMICS

The Scale-dependent Energy Transfer Rate as a Tracer for Star Formation in Cosmological N-Body Simulations. *M. Hoesft, J. P. Mücke, & P. Heide.* 570, 33 (2002)

Formation and Fragmentation of Gaseous Spurs in Spiral Galaxies. *Woong-Tae Kim & Eve C. Ostriker.* 570, 132 (2002)

Keck Absorption-Line Spectroscopy of Galactic Winds in Ultraluminous Infrared Galaxies. *David S. Rupke, Sylvain Veilleux, & D. B. Sanders.* 570, 588 (2002)

Physical versus Observational Properties of Clouds in Turbulent Molecular Cloud Models. *Javier Ballesteros-Parades & Moncecá-Mark Mac Low.* 570, 734 (2002)

Velocity Structure of the Interstellar Medium as Seen by the Spectral Correlation Function. *Javier Ballesteros-Paredes, Enrique Vázquez-Semadeni, & Alyssa A. Goodman.* 571, 334 (2002)

The Dynamical Evolution of the Circumstellar Gas around Low- and Intermediate-Mass Stars. I. The Asymptotic Giant Branch. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado.* 571, 880 (2002)

Flux-Velocity Relation for H<sub>2</sub> Outflows. *Luis Salas & Irene Cruz-González.* 572, 227 (2002)

The Optical Spectrum of the SN 1006 Supernova Remnant Revisited. *Parviz Ghavamian, P. Frank Winkler, John C. Raymond, & Knox S. Long.* 572, 888 (2002)

## ISM: LINES AND BANDS

Hydrocarbons, Ices, and "XCN" in the Line of Sight toward the Galactic Center. *J. E. Chiar, A. J. Adamson, Y. J. Pendleton, D. C. B. Whittet, D. A. Caldwell, & E. L. Gibb.* 570, 198 (2002)

Understanding the Nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43. *Teresa Giannini, Brunella Nisini, Alessio Caratti o Garatti, & Dario Lorenzetti.* 570, L33 (2002)

The Origin of Far-Infrared [C II] Emission in the Large Magellanic Cloud. *Sungeun Kim & William T. Reach.* 571, 288 (2002)

Do the Infrared Emission Features Need Ultraviolet Excitation? The Polycyclic Aromatic Hydrocarbon Model in UV-poor Reflection Nebulae. *Aigen Li & B. T. Draine.* 572, 232 (2002)

# ISM: MAGNETIC FIELDS

- Formation and Fragmentation of Gaseous Spurs in Spiral Galaxies. *Woong-Tae Kim & Eve C. Ostriker*. 570, 132 (2002)
- Enhancement of Ambipolar Diffusion Rates through Field Fluctuations. *Marco Fatuzzo & Fred C. Adams*. 570, 210 (2002)
- Counterclockwise Magnetic Fields in the Norma Spiral Arm. *J. L. Han, R. N. Manchester, A. G. Lyne, & G. J. Qiao*. 570, L17 (2002)
- The Parker Instability in Three Dimensions: Corrugations and Superclouds along the Carina-Sagittarius Arm. *José Franco, Jongsoo Kim, Emilio J. Alfaro, & Seung Soo Hong*. 570, 647 (2002)
- Magnetic Fields in Star-forming Molecular Clouds. IV. Polarimetry of the Filamentary NGC 2068 Cloud in Orion B. *Brenda C. Matthews & Christine D. Wilson*. 571, 356 (2002)
- Dynamical Quenching of the  $\alpha^2$  Dynamo. *George B. Field & Eric G. Blackman*. 572, 685 (2002)

# ISM: MOLECULES

- Hydrocarbons, Ices, and "XCN" in the Line of Sight toward the Galactic Center. *J. E. Chiar, A. J. Adamson, Y. J. Pendleton, D. C. B. Whittet, D. A. Caldwell, & E. L. Gibb*. 570, 198 (2002)
- The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte*. 570, 708 (2002)
- The Formation of Massive Stars. I. High-Resolution Millimeter and Radio Studies of High-Mass Protostellar Candidates. *Sergio Molinari, Leonardo Testi, Luis F. Rodríguez, & Qizhou Zhang*. 570, 758 (2002)
- $N_2H^+$  and  $C^{18}$  Depletion in a Cold Dark Cloud. *Edwin A. Bergin, João Alves, Tracy Huard, & Charles J. Lada*. 570, L101 (2002)
- Magnetic Fields in Star-forming Molecular Clouds. IV. Polarimetry of the Filamentary NGC 2068 Cloud in Orion B. *Brenda C. Matthews & Christine D. Wilson*. 571, 356 (2002)
- Detection of Triply Deuterated Ammonia in the Barabard I Cloud. *D. C. Lis, E. Roueff, M. Gerin, T. G. Phillips, L. H. Coudert, F. F. S. van der Tak, & P. Shilke*. 571, L55 (2002)
- Interstellar Antifreeze: Ethylene Glycol. *J. M. Hollis, F. J. Lovas, P. R. Jewell, & L. H. Coudert*. 571, L59 (2002)
- Rotational and Vibrational Excitation of CO Molecules by Collisions with  $^4He$  Atoms. *Cesare Cecchi-Pestellini, Enrico Bodo, N. Balakrishnan, & Alexander Dalgarno*. 571, 1015 (2002)
- Efficient Formation of Formaldehyde and Methanol by the Addition of Hydrogen Atom to CO in  $H_2O$ -CO Ice at 10 K. *Naoki Watanabe & Akira Kouchi*. 571, L173 (2002)
- Pathways to Glycine and Other Amino Acids in Ultraviolet-Irradiated Astrophysical Ices Determined Via Quantum Chemical Modeling. *David A. Woon*. 571, L177 (2002)
- Flux-Velocity Relation for  $H_2$  Outflows. *Luis Salas & Irene Cruz-González*. 572, 227 (2002)
- Dense Cores in Dark Clouds. XIV.  $N_2H^+$  (1–0) Maps of Dense Cloud Cores. *Paola Caselli, Priscilla J. Benson, Philip C. Myers, & Mario Tafalla*. 572, 238 (2002)
- CO Isotopes in Planetary Nebulae. *Dana S. Balser, Joseph P. McMullin, & T. L. Wilson*. 572, 326 (2002)
- High-Resolution Measurements of Intersystem Bands of Carbon Monoxide toward X Persei. *Yaron Sheffer, S. R. Federman, & David L. Lambert*. 572, L95 (2002)

# ISM: PLANETARY NEBULAE: GENERAL

- X-Ray Emission from Central Binary Systems of Planetary Nebulae. *Noam Soker & Joel H. Kastner*. 570, 245 (2002)
- On the Formation of Multiple Arcs around Asymptotic Giant Branch Stars. *Noam Soker*. 570, 369 (2002)
- The Dynamical Evolution of the Circumstellar Gas around Low- and Intermediate-Mass Stars. I. The Asymptotic Giant Branch. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado*. 571, 880 (2002)
- Two Subclasses of Proto-Planetary Nebulae: Model Calculations. *Margaret Meixner, Toshiya Ueta, Matthew Bobrowsky, & Angela Speck*. 571, 936 (2002)
- CO Isotopes in Planetary Nebulae. *Dana S. Balser, Joseph P. McMullin, & T. L. Wilson*. 572, 326 (2002)

# ISM: PLANETARY NEBULAE: INDIVIDUAL

## Name: Wray 17-1

- An Infrared Ring Nebula around MSX5C G358.5391+00.1305: The True Nature of Suspected Planetary Nebula Wray 17-96 Determined via Direct Imaging and Spectroscopy. *Michael P. Egan, J. Simon Clark, Donald R. Mizuno, Sean J. Carey, Iain A. Steele, & Stephan D. Price*. 572, 288 (2002)

# ISM: REFLECTION NEBULAE

- Two Subclasses of Proto-Planetary Nebulae: Model Calculations. *Margaret Meixner, Toshiya Ueta, Matthew Bobrowsky, & Angela Speck*. 571, 936 (2002)
- Do the Infrared Emission Features Need Ultraviolet Excitation? The Polycyclic Aromatic Hydrocarbon Model in UV-poor Reflection Nebulae. *Aigen Li & B. T. Draine*. 572, 232 (2002)

# ISM: STRUCTURE

- The Parker Instability in Three Dimensions: Corrugations and Superclouds along the Carina-Sagittarius Arm. *José Franco, Jongsoo Kim, Emilio J. Alfaro, & Seung Soo Hong*. 570, 647 (2002)
- The Dynamical Evolution of the Circumstellar Gas around Low- and Intermediate-Mass Stars. I. The Asymptotic Giant Branch. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado*. 571, 880 (2002)
- Dense Cores in Dark Clouds. XIV.  $N_2H^+$  (1–0) Maps of Dense Cloud Cores. *Paola Caselli, Priscilla J. Benson, Philip C. Myers, & Mario Tafalla*. 572, 238 (2002)
- Far-Ultraviolet Spectroscopic Explorer Observations of Degree-Scale Variations in Galactic Halo O vi. *J. Christopher Howk, Blair D. Savage, Kenneth R. Sembach, & Charles G. Hoopes*. 572, 264 (2002)

# ISM: SUPERNOVA REMNANTS

- A Chandra Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center? *Y. Maeda, F. K. Baganoff, E. D. Feigelson, M. Morris, M. W. Bautz, W. N. Brandt, D. N. Burrows, J. P. Doty, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley*. 570, 671 (2002)
- New Constraints on Neutron Star Cooling from Chandra Observations of 3C 58. *Patrick O. Slane, David J. Helfand, & Stephen S. Murray*. 571, L45 (2002)
- On the Possible Reason for Nondetection of TeV Protons in Supernova Remnants. *M. A. Malkov, P. H. Diamond, & T. W. Jones*. 571, 856 (2002)
- ASCA View of the Supernova Remnant  $\gamma$  Cygni (G78.2+2.1): Bremsstrahlung X-Ray Spectrum from Loss-Flattened Electron Distribution. *Y. Uchiyama, T. Takahashi, F. A. Aharonian, & J. R. Mattox*. 571, 866 (2002)
- History of Milky Way Dwarf Spheroidal Galaxies Imprinted on Abundance Patterns of Neutron-Capture Elements. *Takaji Tsujimoto & Toshikazu Shigezawa*. 571, L93 (2002)
- Spectral Components of the Radio Composite Supernova Remnant G11.2–0.3. *Cindy Tam, Mallory S. E. Roberts, & Victoria M. Kaspi*. 572, 202 (2002)
- Evolution and Geometry of Hot Spots in Supernova Remnant 1987A. *Ben E. K. Sugerman, Stephen S. Lawrence, Arlin P. S. Crotts, Patrice Bouchet, & Steve R. Heathcote*. 572, 209 (2002)
- The Optical Spectrum of the SN 1006 Supernova Remnant Revisited. *Parviz Ghavamian, P. Frank Winkler, John C. Raymond, & Knox S. Long*. 572, 888 (2002)
- ASCA Observations of the Supernova Remnant IC 443: Thermal Structure and Detection of Overionized Plasma. *Masahiro T. Kawasaki, Masanobu Ozaki, Fumiaki Nagase, Kuniaki Masai, Manabu Ishida, & Robert Petre*. 572, 897 (2002)
- Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A. *Chun S. J. Pun, Eli Michael, Svetozar A. Zhekov, Richard McCray, Peter M. Garavich, Peter M. Challis, Robert P. Kirshner, E. Baron, David Branch, Roger A. Chevalier, Alexei V. Filippenko, Claes Fransson, Bruno Leibundgut, Peter Lundqvist, Nino Panagia, M. M. Phillips, Brian Schmidt, George Sonneborn, Nicholas B. Suntzeff, Lifan Wang, & J. Craig Wheeler*. 572, 906 (2002)
- LINE: FORMATION**
- Inner-Shell 1s–2p Soft X-Ray Absorption Lines. *Ehud Behar & Hagai Netzer*. 570, 165 (2002)
- Energy Balance in the Solar Transition Region. IV. Hydrogen and Helium Mass Flows with Diffusion. *J. M. Fontenla, E. H. Avrett, & R. Loeser*. 572, 636 (2002)
- Soft X-Ray Emission Lines in the Early Afterglow of Gamma-Ray Bursts. *Davide Lazzati, Enrico Ramirez-Ruiz, & Martin J. Rees*. 572, L57 (2002)



- The Type Ic Hypernova SN 2002ap. *P. A. Mazzali, J. Deng, K. Maeda, K. Nomoto, H. Umeda, K. Hatano, K. Iwamoto, Y. Yoshii, Y. Kobayashi, T. Minezaki, M. Doi, K. Enya, H. Tomita, S. J. Smartt, K. Kingugasa, H. Kawakita, K. Ayani, T. Kawabata, H. Yamaoka, Y. L. Qiu, K. Motohara, C. L. Gerardy, R. Fesen, K. S. Kawabata, M. Iye, N. Kashikawa, G. Kosugi, Y. Ohyama, M. Takada-Hidai, G. Zhao, R. Chornock, A. V. Filippenko, S. Benetti, & M. Turatto.* 572, L61 (2002)
- Are the Narrow-Line Regions in Active Galaxies Dusty and Radiation Pressure Dominated? *Michael A. Dopita, Brent A. Groves, Ralph S. Sutherland, Luc Binette, & Gerald Cecil.* 572, 753 (2002)

#### LINE: IDENTIFICATION

- The Far-Ultraviolet Spectrum of TW Hydrae. I. Observations of H<sub>2</sub> Fluorescence. *Gregory J. Herczeg, Jeffrey L. Linsky, Jeff A. Valenti, Christopher M. Johns-Krull, & Brian E. Wood.* 572, 310 (2002)
- The Type Ic Hypernova SN 2002ap. *P. A. Mazzali, J. Deng, K. Maeda, K. Nomoto, H. Umeda, K. Hatano, K. Iwamoto, Y. Yoshii, Y. Kobayashi, T. Minezaki, M. Doi, K. Enya, H. Tomita, S. J. Smartt, K. Kingugasa, H. Kawakita, K. Ayani, T. Kawabata, H. Yamaoka, Y. L. Qiu, K. Motohara, C. L. Gerardy, R. Fesen, K. S. Kawabata, M. Iye, N. Kashikawa, G. Kosugi, Y. Ohyama, M. Takada-Hidai, G. Zhao, R. Chornock, A. V. Filippenko, S. Benetti, & M. Turatto.* 572, L61 (2002)

#### LINE: PROFILES

- Gaussian Spectral Line Profiles of Astrophysical Masers. *W. D. Watson, A. P. Sarma, & M. S. Singleton.* 570, L37 (2002)
- Variability of Southern T Tauri Stars. II. The Spectral Variability of the Classical T Tauri Star TW Hydrae. *Silvia H. P. Alencar & Celso Batalha.* 571, 378 (2002)

#### MAGNETIC FIELDS

- Activity in Very Cool Stars: Magnetic Dissipation in Late M and L Dwarf Atmospheres. *Subhanjoy Mohanty, Gibor Basri, Frank Shu, France Allard, & Gilles Chabrier.* 571, 469 (2002)
- Partial Field Opening and Current Sheet Formation in the Disk Magnetosphere. *Dmitri A. Uzdensky.* 572, 432 (2002)
- Photo Splitting in the Superstrong Magnetic Fields of Pulsars. *Vladimir V. Usov.* 572, L87 (2002)
- A Simple Model for a Magnetic Reconnection-heated Corona. *B. F. Liu, S. Mineshige, & K. Shibata.* 572, L173 (2002)

#### MAGNETOHYDRODYNAMICS: MHD

- Formation and Fragmentation of Gaseous Spurs in Spiral Galaxies. *Woong-Tae Kim & Eve C. Ostriker.* 570, 132 (2002)
- Transmagnetosonic Accretion in a Black Hole Magnetosphere. *Masaaki Takahashi.* 570, 264 (2002)
- The Effect of the Hall Term on the Nonlinear Evolution of the Magnetorotational Instability. I. Local Axisymmetric Simulations. *Takayoshi Sano & James M. Stone.* 570, 314 (2002)
- Particle Acceleration Scalings Based on Exact Analytic Models for Magnetic Reconnection. *I. J. D. Craig & Yuri E. Livinenko.* 570, 387 (2002)
- The Parker Instability in Three Dimensions: Corrugations and Superclouds along the Carina-Sagittarius Arm. *José Franco, Jongsoo Kim, Emilio J. Alfaro, & Seung Soo Hong.* 570, 647 (2002)
- Three-dimensional Magnetohydrodynamic Simulations of an Accretion Disk with Star-Disk Boundary Layer. *Adriane Steinacker & John C. B. Papaloizou.* 571, 413 (2002)
- Numerical Study of Three-dimensional Magnetohydrodynamic Instability in the Solar Coronal Magnetic Arcades. *K. Kusano.* 571, 532 (2002)
- Magnetized Turbulent Dynamos in Protogalaxies. *Leonid Malyschkin & Russell M. Kulsrud.* 571, 619 (2002)
- Quiescent Solar Prominences and Magnetic-Energy Storage. *B. Fong, B. C. Low, & Y. Fan.* 571, 987 (2002)
- Damping of Low-Frequency Alfvén Waves in Fast Polar Coronal Winds from the Rotating Sun. *Yu-Qing Lou.* 571, L187 (2002)
- Partial Field Opening and Current Sheet Formation in the Disk Magnetosphere. *Dmitri A. Uzdensky.* 572, 432 (2002)
- Poynting Jets from Accretion Disks. *R. V. E. Lovelace, H. Li, A. V. Koldoba, G. V. Ustyugova, & M. M. Romanova.* 572, 445 (2002)
- Dynamical Quenching of the  $\alpha^2$  Dynamo. *George B. Field & Eric G. Blackman.* 572, 685 (2002)
- Radio Pulses through a Magnetized Relativistic Pair Plasma Flow. *Yu-Qing Lou.* 572, L91 (2002)
- Bulk Heating and Slender Magnetic Loops in the Solar Corona. *Boris Vilhelm Gudiksen & Åke Nordlund.* 572, L113 (2002)

- Magnetohydrodynamic Shock Conditions for Accreting Plasma onto Kerr Black Holes. *I. Masaaki Takahashi, Darrell Rilett, Keigo Fukumura, & Sachiko Tsuruta.* 572, 950 (2002)

#### MASERS

- Gaussian Spectral Line Profiles of Astrophysical Masers. *W. D. Watson, A. P. Sarma, & M. S. Singleton.* 570, L37 (2002)
- Models of Planets and Brown Dwarfs in Mira Winds. *Curtis Struck, Babak E. Cohan, & Lee Anne Willson.* 572, L83 (2002)
- The OH Megamaser Luminosity Function. *Jeremy Darling & Riccardo Giovanelli.* 572, 810 (2002)

#### METEORS, METEOROIDS

- Magnetic Flaring in the Pre-Main-Sequence Sun and Implications for the Early Solar System. *Eric D. Feigelson, Gordon P. Garmire, & Steven H. Pravdo.* 572, 335 (2002)

#### METHODS: ANALYTICAL

- Statistical Mechanics of the Cosmological Many-Body Problem. *Farooq Ahmad, William C. Saslaw, & Naseer Iqbal Bhat.* 571, 576 (2002)
- An Analytical Approach to Inhomogeneous Structure Formation. *Evan Scannapieco & Rennan Barkana.* 571, 585 (2002)
- Magnetized Turbulent Dynamos in Protogalaxies. *Leonid Malyschkin & Russell M. Kulsrud.* 571, 619 (2002)

#### METHODS: DATA ANALYSIS

- Kinematics of OB Stars. *Richard L. Branham, Jr.* 570, 190 (2002)
- Tomography of the Solar Corona. I. Robust, Regularized, Positive Estimation of the Three-dimensional Electron Density Distribution from LASCO-C2 Polarized White-Light Images. *Richard A. Frazin & Paul Janzen.* 570, 408 (2002)
- Shape Reconstruction and Weak Lensing Measurement with Interferometers: A Shapelet Approach. *Tzu-Ching Chang & Alexandre Refregier.* 570, 447 (2002)
- The Brera Multiscale Wavelet Detection Algorithm Applied to the Chandra Deep Field-South: Deeper and Deeper. *A. Moretti, D. Lazzati, S. Campana, & G. Tagliaferri.* 570, 502 (2002)
- The Angular Power Spectrum of Galaxies from Early Sloan Digital Sky Survey Data. *Max Tegmark, Scott Dodelson, Daniel J. Eisenstein, Vijay Narayanan, Roman Scoccimarro, Ryan Scranton, Michael A. Strauss, Andrew Connolly, Joshua A. Frieman, James E. Gunn, Lam Hui, Bhuvnesh Jain, David Johnston, Stephen Kent, Jon Loveday, Robert C. Nichol, Liam O'Connell, Ravi K. Sheth, Albert Stebbins, Alexander S. Szalay, István Szapudi, Michael S. Vogeley, Idit Zehavi, James Annis, Neta A. Bahcall, J. Brinkmann, István Csabai, Mamoru Doi, Masataka Fukugita, Greg Hennessy, Željko Ivezić, Gillian R. Knapp, Don Q. Lamb, Brian C. Lee, Robert H. Lupton, Timothy A. McKay, Peter Kunszt, Jeffrey A. Munn, John Peoples, Jeffrey R. Pier, Michael Richmond, Constance Rockosi, David Schlegel, Christopher Stoughton, Douglas L. Tucker, Brian Yanny, & Donald G. York.* 571, 191 (2002)
- Velocity Structure of the Interstellar Medium as Seen by the Spectral Correlation Function. *Javier Ballesteros-Paredes, Enrique Vázquez-Semadeni, & Alyssa A. Goodman.* 571, 334 (2002)
- Optimal Chandra and XMM-Newton Bandpasses for Detecting Low-Temperature Groups and Clusters of Galaxies. *Caleb Scharf.* 572, 157 (2002)
- Recurring Outbursts and Nuclear Fragmentation of Comet C/2001 A2 (LINEAR). *Zdenek Sekanina, Emmanuel Jehin, Hermann Boehnhardt, Xavier Bonfils, Oliver Schuetz, & Daniel Thomas.* 572, 679 (2002)
- Four Years of Monitoring Blazar PKS 2155-304 with BeppoSAX: Probing the Dynamics of the Jet. *Y. H. Zhang, A. Treves, A. Celotti, L. Chiappetti, G. Fossati, G. Ghisellini, L. Maraschi, E. Pian, G. Tagliaferri, & F. Tavecchio.* 572, 762 (2002)
- Cosmic Shear and Power Spectrum Normalization with the Hubble Space Telescope. *Alexandre Refregier, Jason Rhodes, & Edward J. Groth.* 572, L131 (2002)

#### METHODS: LABORATORY

- Efficient Formation of Formaldehyde and Methanol by the Addition of Hydrogen Atom to CO in H<sub>2</sub>O-CO Ice at 10 K. *Naoki Watanabe & Akira Kouchi.* 571, L173 (2002)

#### METHODS: N-BODY SIMULATIONS

- The Promiscuous Nature of Stars in Clusters. *Jarrod R. Hurley & Michael M. Shara.* 570, 184 (2002)
- Star Clusters as Type Ia Supernova Factories. *Michael M. Shara & Jarrod R. Hurley.* 571, 830 (2002)

- Dynamics of a Massive Black Hole at the Center of a Dense Stellar System. *Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb*. 572, 371 (2002)
- The Dynamical Simulations of the Planets Orbiting GJ 876. *Jianghui Ji, Guangyu Li, & Lin Liu*. 572, 1041 (2002)
- METHODS: NUMERICAL**
- Mass Segregation in Globular Clusters. *J. M. Fregeau, K. J. Joshi, S. F. Portegies Zwart, & F. A. Rasio*. 570, 171 (2002)
- Three-dimensional Simulations of the Gravitational Collapse of Logotropic Molecular Cloud Cores. *Michael A. Reid, Ralph E. Pudritz, & James Wadsley*. 570, 231 (2002)
- The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. *J. P. Aufdenberg, P. H. Hauschildt, E. Baron, T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry*. 570, 344 (2002)
- Turbulent Convection under the Influence of Rotation: Sustaining a Strong Differential Rotation. *Allan Sacha Brun & Juri Toomre*. 570, 865 (2002)
- The Growth of Galaxies in Cosmological Simulations of Structure Formation. *Chigurupati Murali, Neal Katz, Lars Hernquist, David H. Weinberg, & Romeel Davé*. 571, 1 (2002)
- Three-dimensional Magnetohydrodynamic Simulations of an Accretion Disk with Star-Disk Boundary Layer. *Adriane Steinacker & John C. B. Papaloizou*. 571, 413 (2002)
- Constrained Simulations of the Real Universe. II. Observational Signatures of Intergalactic Gas in the Local Supercluster Region. *Andrey V. Kravtsov, Anatoly Klypin, & Yehuda Hoffman*. 571, 563 (2002)
- Lognormal Property of Weak-Lensing Fields. *Atsushi Taruya, Masahiro Takada, Takashi Hamana, Issha Kayo, & Toshifumi Futamase*. 571, 638 (2002)
- Resonance Line Profile Calculations Based on Hydrodynamical Models of Cataclysmic Variable Winds. *Daniel Proga, Timothy R. Kallman, Janet E. Drew, & Louise E. Hartley*. 572, 382 (2002)
- Dynamic Quenching of the  $\alpha^2$  Dynamo. *George B. Field & Eric G. Blackman*. 572, 685 (2002)
- Cosmological Hydrogen Reionization with Three-dimensional Radiative Transfer. *Alexei O. Razoumov, Michael L. Norman, Tom Abel, & Douglas Scott*. 572, 695 (2002)
- METHODS: STATISTICAL**
- Two-dimensional Topology of the Two-Degree Field Galaxy Redshift Survey. *Fiona Hoyle, Michael S. Vogeley, & J. Richard Gott III*. 570, 44 (2002)
- The Physical Content of the Leading Orders of Principal Component Analysis of Spectral Profiles. *A. Skumanich & A. López Ariste*. 570, 379 (2002)
- Velocity Structure of the Interstellar Medium as Seen by the Spectral Correlation Function. *Javier Ballesteros-Paredes, Enrique Vázquez-Semadeni, & Alyssa A. Goodman*. 571, 334 (2002)
- Statistics, Handle with Care: Detecting Multiple Model Components with the Likelihood Ratio Test. *Rostislav Protopopov, David A. van Dyk, Alanna Connors, Vinay L. Kashyap, & Aneta Semiginowska*. 571, 545 (2002)
- Correcting Parameters of Events Based on the Entropy of Microlensing Ensemble. *Piotr Popowski & Charles Alcock*. 572, 514 (2002)
- MOLECULAR DATA**
- Rotational and Vibrational Excitation of CO Molecules by Collisions with  $^4\text{He}$  Atoms. *Cesare Cecchi-Pestellini, Enrico Bodo, N. Balakrishnan, & Alexander Dalgarno*. 571, 1015 (2002)
- Efficient Formation of Formaldehyde and Methanol by the Addition of Hydrogen Atom to CO in  $\text{H}_2\text{O}$ -CO Ice at 10 K. *Naoki Watanabe & Akira Kouchi*. 571, 1173 (2002)
- Dense Cores in Dark Clouds. XIV.  $\text{N}_2\text{H}^+$  (1–0) Maps of Dense Cloud Cores. *Paola Caselli, Priscilla J. Benson, Philip C. Myers, & Mario Tafalla*. 572, 238 (2002)
- High-Resolution Measurements of Intersystem Bands of Carbon Monoxide toward X Persei. *Yaron Sheffer, S. R. Federman, & David L. Lambert*. 572, 195 (2002)
- MOLECULAR PROCESSES**
- Rotational and Vibrational Excitation of CO Molecules by Collisions with  $^4\text{He}$  Atoms. *Cesare Cecchi-Pestellini, Enrico Bodo, N. Balakrishnan, & Alexander Dalgarno*. 571, 1015 (2002)
- Efficient Formation of Formaldehyde and Methanol by the Addition of Hydrogen Atom to CO in  $\text{H}_2\text{O}$ -CO Ice at 10 K. *Naoki Watanabe & Akira Kouchi*. 571, 1173 (2002)
- Pathways to Glycine and Other Amino Acids in Ultraviolet-Irradiated Astrophysical Ices Determined Via Quantum Chemical Modeling. *David A. Woon*. 571, 1177 (2002)
- Revised Fluorescence Efficiencies of Cometary  $\text{NH}_2$ : Ammonia Abundance in Comets. *Hideyo Kawakita & Jun-ichi Watanabe*. 572, 1177 (2002)
- NUCLEAR REACTIONS, NUCLEOSYNTHESIS, ABUNDANCES**
- Structure, Evolution, and Nucleosynthesis of Primordial Stars. *Lionel Siess, Mario Livio, & John Lattanzio*. 570, 329 (2002)
- Cross Section for the Astrophysical  $^{14}\text{C}(n, \gamma)^{15}\text{C}$  Reaction via the Inverse Reaction. *Á. Horváth, J. Weiner, A. Galonsky, F. Deák, Y. Higurashi, K. Ieki, Y. Iwata, Á. Kiss, J. J. Kolata, Z. Seres, J. von Schwarzenberg, H. Schelin, S. Takeuchi, S. Typel, & R. E. Warner*. 570, 926 (2002)
- The UCSD HIRE/Keck I Damped Ly $\alpha$  Abundance Database. III. An Empirical Study of Photoionization in the Damped Ly $\alpha$  System toward GB 1759+7539. *Jason X. Prochaska, J. Christopher Howk, John M. O'Meara, David Tytler, Arthur M. Wolfe, David Kirkman, Dan Lubin, & Nao Suzuki*. 571, 693 (2002)
- The Type Ic Hypernova SN 2002ap. *P. A. Mazzali, J. Deng, K. Maeda, K. Nomoto, H. Umeda, K. Hatano, K. Iwamoto, Y. Yoshii, Y. Kobayashi, T. Minezaki, M. Doi, K. Enya, H. Tomita, S. J. Smart, K. Kingugasa, H. Kawakita, K. Ayani, T. Kawabata, H. Yamaoka, Y. L. Qiu, K. Motohara, C. L. Gerardy, R. Fesen, K. S. Kawabata, M. Iye, N. Kashikawa, G. Kosugi, Y. Ohyama, M. Takada-Hidai, G. Zhao, R. Chornock, A. V. Filippenko, S. Benetti, & M. Turatto*. 572, L61 (2002)
- The Chemical Composition and Age of the Metal-poor Halo Star BD +17° 3248. *John J. Cowan, Christopher Sneden, Scott Burles, Inese I. Ivans, Timothy C. Beers, James W. Truran, James E. Lawler, Francesca Primas, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz*. 572, 861 (2002)
- PLANETS AND SATELLITES: GENERAL**
- Planet Migration and Gap Formation by Tidally Induced Shocks. *R. R. Rafikov*. 572, 566 (2002)
- PLANETS AND SATELLITES: INDIVIDUAL**
- Europa**
- Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus. *Ronald F. Elsner, G. Randall Gladstone, J. Hunter Waite, Frank J. Cray, Robert R. Howell, Robert E. Johnson, Peter G. Ford, Albert E. Metzger, Kevin C. Hurley, Eric D. Feigelson, Gordon P. Garmire, Anil Bhardwaj, Denis C. Grodent, Tariq Majeed, Allyn F. Tennant, & Martin C. Weisskopf*. 572, 1077 (2002)
- Io**
- The Abundance of Atomic Sulfur in the Atmosphere of Io. *Lori M. Feaga, Melissa A. McGrath, & Paul D. Feldman*. 570, 439 (2002)
- Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus. *Ronald F. Elsner, G. Randall Gladstone, J. Hunter Waite, Frank J. Cray, Robert R. Howell, Robert E. Johnson, Peter G. Ford, Albert E. Metzger, Kevin C. Hurley, Eric D. Feigelson, Gordon P. Garmire, Anil Bhardwaj, Denis C. Grodent, Tariq Majeed, Allyn F. Tennant, & Martin C. Weisskopf*. 572, 1077 (2002)
- Jupiter**
- Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus. *Ronald F. Elsner, G. Randall Gladstone, J. Hunter Waite, Frank J. Cray, Robert R. Howell, Robert E. Johnson, Peter G. Ford, Albert E. Metzger, Kevin C. Hurley, Eric D. Feigelson, Gordon P. Garmire, Anil Bhardwaj, Denis C. Grodent, Tariq Majeed, Allyn F. Tennant, & Martin C. Weisskopf*. 572, 1077 (2002)
- PLASMAS**
- Nonthermal Electrons at High Mach Number Shocks: Electron Shock Suffering Acceleration. *M. Hoshino & N. Shimada*. 572, 880 (2002)
- ASCA Observations of the Supernova Remnant IC 443: Thermal Structure and Detection of Overionized Plasma. *Masahiro T. Kawasaki, Masanobu Ozaki, Fumiaki Nagase, Kuniaki Masai, Manabu Ishida, & Robert Petre*. 572, 897 (2002)
- POLARIZATION**
- Magnetic Fields in Star-forming Molecular Clouds. IV. Polarimetry of the Filamentary NGC 2068 Cloud in Orion B. *Brenda C. Matthews & Christine D. Wilson*. 571, 356 (2002)
- A Classical Model for the Damped, Magnetic Dipole Oscillator. *Roberto Casini & Haosheng Lin*. 571, 540 (2002)
- The Spectrum and Variability of Circular Polarization in Sagittarius A from 1.4 to 15 GHz. *Geoffrey C. Bower, Heino Falcke, Robert J. Sauls, & Donald C. Backer*. 571, 843 (2002)

Radio Pulses through a Magnetized Relativistic Pair Plasma Flow. *Yu-Qing Lou*. 572, L91 (2002)

#### RADIATION MECHANISMS: GENERAL

The Nuclei of Radio Galaxies in the Ultraviolet: The Signature of Different Emission Processes. *Marco Chiaberge, F. Duccio Macchetto, William B. Sparks, Alessandro Capetti, Mark G. Allen, & André R. Martel*. 571, 247 (2002)

#### RADIATION MECHANISMS: NONTHERMAL

Off-Axis Afterglow Emission from Jetted Gamma-Ray Bursts. *Jonathan Granot, Alin Panaitescu, Pawan Kumar, & Stan E. Woosley*. 570, L61 (2002)

The Spectrum and Variability of Circular Polarization in Sagittarius A from 1.4 to 15 GHz. *Geoffrey C. Bower, Heino Falcke, Robert J. Sault, & Donald C. Backer*. 571, 843 (2002)

ASCA View of the Supernova Remnant  $\gamma$  Cygni (G78.2+2.1): Bremsstrahlung X-Ray Spectrum from Loss-Flattened Electron Distribution. *Y. Uchiyama, T. Takahashi, F. A. Aharonian, & J. R. Mattox*. 571, 866 (2002)

Flaring up All Over—Radio Activity in Rapidly Rotating Late M and L Dwarfs. *E. Berger*. 572, 503 (2002)

Electron Transport during the 1999 August 20 Flare Inferred from Microwave and Hard X-Ray Observations. *Jeongwoo Lee, Dale E. Gary, Jiong Qiu, & Peter T. Gallagher*. 572, 609 (2002)

Soft X-Ray Emission Lines in the Early Afterglow of Gamma-Ray Bursts. *Davide Lazzati, Enrico Ramirez-Ruiz, & Martin J. Rees*. 572, L57 (2002)

ASCA Observations of the Supernova Remnant IC 443: Thermal Structure and Detection of Overionized Plasma. *Masahiro T. Kawasaki, Masanobu Ozaki, Fumiaki Nagase, Kuniaki Masai, Manabu Ishida, & Robert Petre*. 572, 897 (2002)

#### RADIATION MECHANISMS: THERMAL

The O I Line Emission in Active Galactic Nuclei Revisited. *A. Rodríguez-Ardila, S. M. Viegas, M. G. Pastoriza, L. Prato, & Carlos J. Donzelli*. 572, 94 (2002)

#### RADIATIVE TRANSFER

Dust Emission from Active Galactic Nuclei. *Maia Nenkova, Željko Ivezić, & Moshe Elitzur*. 570, L9 (2002)

Three Type I X-Ray Bursts from Cygnus X-2: Application of Analytical Models for Neutron Star Mass and Radius Determination. *Lev Titarchuk & Nikolai Shaposhnikov*. 570, L25 (2002)

Spatial Distribution of Dust Grains within H II Regions. *Akio K. Inoue*. 570, 688 (2002)

A Classical Model for the Damped, Magnetic Dipole Oscillator. *Roberto Casini & Haosheng Lin*. 571, 540 (2002)

Energy Balance in the Solar Transition Region. IV. Hydrogen and Helium Mass Flows with Diffusion. *J. M. Fontenla, E. H. Avrett, & R. Loeser*. 572, 636 (2002)

Cosmological Hydrogen Reionization with Three-dimensional Radiative Transfer. *Alexei O. Razoumov, Michael L. Norman, Tom Abel, & Douglas Scott*. 572, 695 (2002)

#### RADIO CONTINUUM: GALAXIES

Understanding the Nature of the Optically Faint Radio Sources and Their Connection to the Submillimeter Population. *Scott C. Chapman, Geraint F. Lewis, Douglas Scott, Colin Borys, & Eric Richards*. 570, 557 (2002)

#### RADIO CONTINUUM: GENERAL

Microarcsecond Radio Imaging Using Earth-Orbit Synthesis. *Jean-Pierre Macquart & David L. Jauncey*. 572, 786 (2002)

#### RADIO CONTINUUM: ISM

MERLIN Radio Detection of an Interaction Zone within a Binary Orion Proplyd System. *M. F. Graham, J. Meaburn, S. T. Garrington, T. J. O'Brien, W. J. Henney, & C. R. O'Dell*. 570, 222 (2002)

The Formation of Massive Stars. I. High-Resolution Millimeter and Radio Studies of High-Mass Protostellar Candidates. *Sergio Molinari, Leonardo Testi, Luis F. Rodríguez, & Qizhou Zhang*. 570, 758 (2002)

Australia Telescope Compact Array Radio Imaging of the Proplyd-like Objects in the Giant H II Region NGC 3603. *A. Mücke, B. S. Koribalski, A. F. J. Moffat, M. F. Corcoran, & I. R. Stevens*. 571, 366 (2002)

The Nature of the Cluster of Radio Sources in GGD 14. *Y. Gómez, L. F. Rodríguez, & G. Garay*. 571, 901 (2002)

Spectral Components of the Radio Composite Supernova Remnant G11.2–0.3. *Cindy Tam, Mallory S. E. Roberts, & Victoria M. Kaspi*. 572, 202 (2002)

X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S. *David Pooley, Walter H. G. Lewin, Derek W. Fox, Jon M. Miller, Christina K. Lacey, Schuyler D. Van Dyk, Kurt W. Weiler, Richard A. Sramek, Alexei V. Filippenko, Douglas C. Leonard, Stefan Immler, Roger A. Chevalier, Andrew C. Fabian, Claes Fransson, & Ken'ichi Nomoto*. 572, 932 (2002)

#### RADIO CONTINUUM: STARS

The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. *J. P. Aufdenberg, P. H. Hauschildt, E. Baron, T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry*. 570, 344 (2002)

Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105. *Y. Ueda, K. Yamaoka, C. Sánchez-Fernández, V. Dhawan, S. Chaty, J. E. Grove, M. McCollough, A. J. Castro-Tirado, F. Mirabel, K. Kohno, M. Feroci, P. Casella, S. A. Trushkin, H. Castaneda, J. Rodríguez, P. Durouchoux, K. Ebisawa, T. Kotani, J. Swank, & H. Inoue*. 571, 918 (2002)

The Central Binary and Surrounding Nebula of the Symbiotic Star V1016 Cygni. *C. Brocksopp, M. F. Bode, S. P. S. Eyres, M. M. Crocker, R. Davis, & A. R. Taylor*. 571, 947 (2002)

XMM-Newton Detection of Hard X-Ray Emission in the Nitrogen-Type Wolf-Rayet Star WR 110. *Stephen L. Skinner, Svetozar A. Zhekov, Manuel Güdel, & Werner Schmutz*. 572, 477 (2002)

Possible Corotation of the Milliarcsecond Radio Structure of the Close Binary HR 1099. *R. R. Ransom, N. Bartel, M. F. Bietenholz, D. E. Lebach, M. I. Ratner, I. I. Shapiro, & J.-F. Lestrade*. 572, 487 (2002)

Flaring up All Over—Radio Activity in Rapidly Rotating Late M and L Dwarfs. *E. Berger*. 572, 503 (2002)

#### RADIO LINES: GALAXIES

Detecting Gravitational Lensing Cosmic Shear from Samples of Several Galaxies Using Two-Dimensional Spectral Imaging. *A. W. Blain*. 570, L51 (2002)

The Origin of Far-Infrared [C II] Emission in the Large Magellanic Cloud. *Sungeun Kim & William T. Reach*. 571, 288 (2002)

The OH Megamaser Luminosity Function. *Jeremy Darling & Riccardo Giovanelli*. 572, 810 (2002)

On the Direct Detectability of the Cosmic Dark Ages: 21 Centimeter Emission from Minihalos. *Ilian T. Iliev, Paul R. Shapiro, Andrea Ferrara, & Hugo Martel*. 572, L123 (2002)

#### RADIO LINES: ISM

Gaussian Spectral Line Profiles of Astrophysical Masers. *W. D. Watson, A. P. Sarma, & M. S. Singleton*. 570, L37 (2002)

Interstellar Antifreeze: Ethylene Glycol. *J. M. Hollis, F. J. Lovas, P. R. Jewell, & L. H. Coudert*. 571, L59 (2002)

Dense Cores in Dark Clouds. XIV. N<sub>2</sub>H<sup>+</sup> (1–0) Maps of Dense Cloud Cores. *Paola Caselli, Priscilla J. Benson, Philip C. Myers, & Mario Tafalla*. 572, 238 (2002)

CO Isotopes in Planetary Nebulae. *Dana S. Balser, Joseph P. McMullin, & T. L. Wilson*. 572, 326 (2002)

#### RELATIVITY

Transmagnetosonic Accretion in a Black Hole Magnetosphere. *Masaaki Takahashi*. 570, 264 (2002)

Numerical Models of Binary Neutron Star System Mergers. II. Coalescing Models with Post-Newtonian Radiation Reaction Forces. *Alan C. Calder & Edward Y. M. Wang*. 570, 303 (2002)

Can Any "Invariants" Be Revealed in Quasi-periodic Phenomena Observed from Scorpius X-1? *Sergey Kuznetsov & Lev Titarchuk*. 571, L137 (2002)

Collapse of a Rotating Supermassive Star to a Supermassive Black Hole: Fully Relativistic Simulations. *Masaru Shibata & Stuart L. Shapiro*. 572, L39 (2002)

Radio Pulses through a Magnetized Relativistic Pair Plasma Flow. *Yu-Qing Lou*. 572, L91 (2002)

Three-dimensional Hydrodynamic Simulations of Relativistic Extragalactic Jets. *Philip A. Hughes, Mark A. Miller, & G. Comer Duncan*. 572, 713 (2002)

Magnetohydrodynamic Shock Conditions for Accreting Plasma onto Kerr Black Holes. *I. Masaaki Takahashi, Darrell Rilett, Keigo Fukumura, & Sachiko Tsuruta*. 572, 950 (2002)

# SCATTERING

- The Spectrum and Variability of Circular Polarization in Sagittarius A from 1.4 to 15 GHz. *Geoffrey C. Bower, Heino Falcke, Robert J. Sault, & Donald C. Backer*. 571, 843 (2002)
- Time-Distance Helioseismology: The Forward Problem for Random Distributed Sources. *L. Gizon & A. C. Birch*. 571, 966 (2002)
- Microarcsecond Radio Imaging Using Earth-Orbit Synthesis. *Jean-Pierre Macquart & David L. Jauncey*. 572, 786 (2002)

# SHOCK WAVES

- Gaussian Spectral Line Profiles of Astrophysical Masers. *W. D. Watson, A. P. Sarma, & M. S. Singleton*. 570, L37 (2002)
- The Influence of Electron Temperature and Magnetic Field Strength on Cosmic-Ray Injection in High Mach Number Shocks. *H. Schmitz, S. C. Chapman, & R. O. Dendy*. 570, 637 (2002)
- Magnetic Topology of Impulsive and Gradual Solar Energetic Particle Events. *Donald V. Reames*. 571, L63 (2002)
- On the Possible Reason for Nondetection of TeV Protons in Supernova Remnants. *M. A. Malkov, P. H. Diamond, & T. W. Jones*. 571, 856 (2002)
- ASCA View of the Supernova Remnant  $\gamma$  Cygni (G78.2+2.1): Bremsstrahlung X-Ray Spectrum from Loss-flattened Electron Distribution. *Y. Uchiyama, T. Takahashi, F. A. Aharonian, & J. R. Mattox*. 571, 866 (2002)
- Gamma-Ray Burst Beaming: A Universal Configuration with a Standard Energy Reservoir? *Bing Zhang & Peter Mészáros*. 571, 876 (2002)
- Dynamic Hydrogen Ionization. *Mats Carlsson & R. F. Stein*. 572, 626 (2002)
- Simultaneous Observations of a Moreton Wave on 1997 November 3 in Ho and Soft X-Rays. *N. Narukage, H. S. Hudson, T. Morimoto, S. Akiyama, R. Kitai, H. Kurokawa, & K. Shibata*. 572, L109 (2002)
- Nonthermal Electrons at High Mach Number Shocks: Electron Shock Suffering Acceleration. *M. Hoshino & N. Shimada*. 572, 880 (2002)
- The Optical Spectrum of the SN 1006 Supernova Remnant Revisited. *Parviz Ghavamian, P. Frank Winkler, John C. Raymond, & Knox S. Long*. 572, 888 (2002)
- Magnetohydrodynamic Shock Conditions for Accreting Plasma onto Kerr Black Holes. *I. Masaaki Takahashi, Darrell Rilett, Keigo Fukumura, & Sachiko Tsuruta*. 572, 950 (2002)

# SOLAR SYSTEM: FORMATION

- Magnetic Flaring in the Pre-Main-Sequence Sun and Implications for the Early Solar System. *Eric D. Feigelson, Gordon P. Garmire, & Steven H. Pravdo*. 572, 335 (2002)
- Planet Migration and Gap Formation by Tidally Induced Shocks. *R. R. Rafikov*. 572, 566 (2002)
- Revised Fluorescence Efficiencies of Cometary  $\text{NH}_2$ : Ammonia Abundance in Comets. *Hideyo Kawakita & Jun-ichi Watanabe*. 572, L177 (2002)

# STARS: ABUNDANCES

- Structure, Evolution, and Nucleosynthesis of Primordial Stars. *Lionel Siess, Mario Livio, & John Lattanzio*. 570, 329 (2002)
- Detailed Analysis of Nearby Bulgelike Dwarf Stars. II. Lithium Abundances. *Luciana Pompéia, Beatriz Barbey, Michel Grenon, & Bruno Vaz Castilho*. 570, 820 (2002)
- Models of Metal-poor Stars with Gravitational Settling and Radiative Accelerations. II. The Age of the Oldest Stars. *Don A. Vandenberg, O. Richard, G. Michaud, & J. Richer*. 571, 487 (2002)
- Rapid Rotation of Ultra-Li-depleted Halo Stars and Their Associations with Blue Stragglers. *Sean G. Ryan, Scott G. Gregory, Ulrich Kolb, Timothy C. Beers, & Toshitaka Kajino*. 571, 501 (2002)
- Ultraviolet C I Lines in the HgMn Star  $\chi$  Lupi. *Charles R. Proffitt*. 571, 955 (2002)
- History of Milky Way Dwarf Spheroidal Galaxies Imprinted on Abundance Patterns of Neutron-Capture Elements. *Takuji Tsujimoto & Toshikazu Shigeyama*. 571, L93 (2002)
- Chandra and ASCA Observations of the X-Ray-brightest T Tauri Stars in the  $\rho$  Ophiuchi Cloud. *Kensuke Imanishi, Masahiro Tsujimoto, & Katsuji Koyama*. 572, 300 (2002)
- The Chemical Composition and Age of the Metal-poor Halo Star BD +17° 3248. *John J. Cowan, Christopher Sneden, Scott Burles, Inese I. Ivans, Timothy C. Beers, James W. Truran, James E. Lawler, Francesca Primas, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz*. 572, 861 (2002)
- A Critical Examination of Li Pollution and Giant-Planet Consumption by a Host Star. *Eric L. Sandquist, Jon J. Dokter, D. N. C. Lin, & Rosemary A. Mardling*. 572, 1012 (2002)

# STARS: ACTIVITY

- Possible Corotation of the Milliarsecond Radio Structure of the Close Binary HR 1099. *R. R. Ransom, N. Bartel, M. F. Bietenholz, D. E. Lebach, M. I. Ratner, I. I. Shapiro, & J.-F. Lestrade*. 572, 487 (2002)
- Flaring up All Over—Radio Activity in Rapidly Rotating Late M and L Dwarfs. *E. Berger*. 572, 503 (2002)

# STARS: AGB AND POST-AGB

- On the Formation of Multiple Arcs around Asymptotic Giant Branch Stars. *Noam Soker*. 570, 369 (2002)
- Time-dependent Asymmetries in the Atmosphere of the Mira Variable R Trianguli through Infrared Interferometry. *R. R. Thompson, M. J. Creech-Eakman, & R. L. Akeson*. 570, 373 (2002)
- Mid-Infrared Observation of Mass Loss in Elliptical Galaxies. *Alex Athey, Joel Bregman, Jesse Bregman, Pasquale Temi, & Marc Sauvage*. 571, 272 (2002)
- The Dynamical Evolution of the Circumstellar Gas around Low- and Intermediate-Mass Stars. I. The Asymptotic Giant Branch. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado*. 571, 880 (2002)
- Two Subclasses of Proto-Planetary Nebulae: Model Calculations. *Margaret Meixner, Toshiya Ueta, Matthew Bobrowsky, & Angela Speck*. 571, 936 (2002)
- Imaging and Spatially Resolved Spectroscopy of AFGL 2688 in the Thermal Infrared Region. *Miwa Goto, Naoto Kobayashi, Hiroshi Terada, & A. T. Tokunaga*. 572, 276 (2002)
- Models of Planets and Brown Dwarfs in Mira Winds. *Curtis Struck, Babak E. Cohanin, & Lee Anne Willson*. 572, L83 (2002)
- A Wall of Dust around a Proto-Mira? *Albert A. Zijlstra & R. Weinberger*. 572, 1006 (2002)

# STARS: ATMOSPHERES

- The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. *J. P. Aufdenberg, P. H. Hauschildt, E. Baron, T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry*. 570, 344 (2002)
- Time-dependent Asymmetries in the Atmosphere of the Mira Variable R Trianguli through Infrared Interferometry. *R. R. Thompson, M. J. Creech-Eakman, & R. L. Akeson*. 570, 373 (2002)
- Evidence of Cloud Disruption in the L/T Dwarf Transition. *Adam J. Burgasser, Mark S. Marley, Andrew S. Ackerman, Didier Saumon, Katharina Lodders, Conrad C. Dahn, Hugh C. Harris, & J. Davy Kirkpatrick*. 571, L151 (2002)
- A Young Very Low Mass Object Surrounded by Warm Dust. *L. Testi, A. Natta, E. Oliva, F. D'Antona, F. Comerón, C. Baffa, G. Comoretto, & S. Gennari*. 571, L155 (2002)
- Atmospheric Lensing and Oblateness Effects during an Extrasolar Planetary Transit. *Lam Hui & Sara Seager*. 572, 540 (2002)

# STARS: BINARIES: CLOSE

- Untangling the X-Ray Emission from the Sa Galaxy NGC 1291 with Chandra. *Jimmy A. Irwin, Craig L. Sarazin, & Joel N. Bregman*. 570, 152 (2002)
- Infrared Photometric Variability of GX 13+1 and GX 17+2. *Reba M. Bandyopadhyay, Philip A. Charles, Tariq Shahbaz, & R. Mark Wagner*. 570, 793 (2002)
- Study of Gamma-Ray Burst Binary Progenitors. *Krzysztof Belczynski, Tomasz Bulik, & Bronislaw Rudak*. 571, 394 (2002)
- Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. *Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler*. 571, 519 (2002)
- X-Ray Binaries and Globular Clusters in Elliptical Galaxies. *Raymond E. White III, Craig L. Sarazin, & Shrinivas R. Kulkarni*. 571, L23 (2002)
- Discovery of an Edge-On Disk in the MBM 12 Young Association. *Ray Jayawardhana, K. L. Luhman, Paola D'Alessio, & John R. Stauffer*. 571, L51 (2002)
- Transient X-Ray Binaries in Elliptical Galaxies. *Anthony L. Piro & Lars Bildsten*. 571, L103 (2002)
- Merger Sites of Double Neutron Stars and their Host Galaxies. *Krzysztof Belczynski, Tomasz Bulik, & Vassiliki Kalogera*. 571, L147 (2002)
- A Comprehensive Study of Binary Compact Objects as Gravitational Wave Sources: Evolutionary Channels, Rates, and Physical Properties. *Krzysztof Belczynski, Vassiliki Kalogera, & Tomasz Bulik*. 572, 407 (2002)
- The Extraordinary Cataclysmic Binary RU Pegasi: The Hottest White Dwarf in a Dwarf Nova? *Edward M. Sion & Joel Urban*. 572, 456 (2002)



- Possible Corotation of the Milliarcsecond Radio Structure of the Close Binary HR 1099. *R. R. Ransom, N. Bartel, M. F. Bietenholz, D. E. Lebach, M. I. Ratner, I. I. Shapiro, & J.-F. Lestrade.* 572, 487 (2002)
- A Tidally Interacting Disk in the Young Triple System WL 20? *Mary Barsony, Thomas P. Greene, & Geoffrey A. Blake.* 572, L75 (2002)
- Nova Scorpii and Coalescing Low-Mass Black Hole Binaries as LIGO Sources. *Michael S. Sipior & Steinn Sigurdsson.* 572, 962 (2002)
- Variability of the X-Ray P Cygni Line Profiles from Circinus X-1 Near Zero Phase. *N. S. Schultz & W. N. Brandt.* 572, 971 (2002)
- On the Progenitor of the Type Ic Supernova 2002ap. *S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Napien.* 572, L147 (2002)
- First High-Contrast Imaging Using a Gaussian Aperture Pupil Mask. *John H. Debes, Jian Ge, & Abhijit Chakraborty.* 572, L165 (2002)
- STARS: BINARIES: ECLIPSING**
- Photometric Solutions for Semidetached Eclipsing Binaries: Selection of Distance Indicators in the Small Magellanic Cloud. *J. S. B. Wyithe & R. E. Wilson.* 571, 293 (2002)
- STARS: BINARIES: GENERAL**
- Hubble Space Telescope/WFPC2 Images of the GG Tauri Circumbinary Disk. *John E. Krist, Karl R. Stapelfeldt, & Alan M. Watson.* 570, 785 (2002)
- First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5. *Jin H. An, M. D. Albrow, J.-P. Beaulieu, J. A. R. Caldwell, D. L. DePoy, M. Dominik, B. S. Gaudi, A. Gould, J. Greenhill, K. Hill, S. Kane, R. Martin, J. Menzies, R. W. Pogge, K. R. Pollard, P. D. Sackett, K. C. Sahu, P. Vermaak, R. Watson, & A. Williams.* 572, 521 (2002)
- Searching for Failed Supernovae with Astrometric Binaries. *Andrew Gould & Samir Salim.* 572, 944 (2002)
- Orbital Stability of Terrestrial Planets inside the Habitable Zones of Extrasolar Planetary Systems. *M. Noble, Z. E. Musielak, & M. Cuntz.* 572, 1024 (2002)
- A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47. *M. D. Albrow, J. An, J. -P. Beaulieu, J. A. R. Caldwell, D. L. DePoy, M. Dominik, B. S. Gaudi, A. Gould, J. Greenhill, K. Hill, S. Kane, R. Martin, J. Menzies, R. W. Pogge, K. R. Pollard, P. D. Sackett, K. C. Sahu, P. Vermaak, R. Watson, & A. Williams.* (The PLANET Collaboration). 572, 1031 (2002)
- STARS: BINARIES: SYMBIOTIC**
- The Central Binary and Surrounding Nebula of the Symbiotic Star V1016 Cygni. *C. Brocksopp, M. F. Bode, S. P. S. Eyres, M. M. Crocker, R. Davis, & A. R. Taylor.* 571, 947 (2002)
- Searching for the Physical Drivers of Eigenvector 1: From Quasars to Nanoquasars. *R. Zamanov & P. Marziani.* 571, L77 (2002)
- STARS: BINARIES: VISUAL**
- A Distant Stellar Companion in the  $\nu$  Andromedae System. *Patrick J. Lowrance, J. Davy Kirkpatrick, & Charles A. Beichman.* 572, L79 (2002)
- STARS: BLUE STRAGGLERS**
- The Promiscuous Nature of Stars in Clusters. *Jarrod R. Hurley & Michael M. Shara.* 570, 184 (2002)
- STARS: CARBON**
- Discovery of an Extremely Red Object in the Field of HD 155826. *C. Lisse, A. Schultz, Y. Fernandez, S. Pecsckke, M. Ressler, V. Gorjian, S. G. Djorgovski, D. J. Christian, B. Golisch, & C. Kaminski.* 570, 779 (2002)
- STARS: CHEMICALLY PECULIAR**
- Ultraviolet C I Lines in the HgMn Star  $\chi$  Lupi. *Charles R. Proffitt.* 571, 955 (2002)
- STARS: CIRCUMSTELLAR MATTER**
- MERLIN Radio Detection of an Interaction Zone within a Binary Orion Proplyd System. *M. F. Graham, J. Meaburn, S. T. Garrington, T. J. O'Brien, W. J. Henney, & C. R. O'Dell.* 570, 222 (2002)
- On the Formation of Multiple Arcs around Asymptotic Giant Branch Stars. *Noam Soker.* 570, 369 (2002)
- Candidate Pre-Main-Sequence F Stars with Circumstellar Dust Identified Using Combined 2MASS and *uvby* Data. *A. A. Suchkov, A. B. Schultz, & C. M. Lisse.* 570, L29 (2002)
- Hubble Space Telescope/WFPC2 Images of the GG Tauri Circumbinary Disk. *John E. Krist, Karl R. Stapelfeldt, & Alan M. Watson.* 570, 785 (2002)
- A Coronagraph with a Band-limited Mask for Finding Terrestrial Planets. *Marc J. Kuchner & Wesley A. Traub.* 570, 900 (2002)
- New Submillimeter Limits on Dust in the 55 Cancri Planetary System. *Ray Jayawardhana, Wayne S. Holland, Paul Kalas, Jane S. Greaves, William R. F. Dent, Mark C. Wyatt, & Geoffrey W. Marcy.* 570, L93 (2002)
- ISOCAM Observations of Galactic Globular Clusters: Mass Loss along the Red Giant Branch. *Livia Origlia, Francesco R. Ferraro, Flavio Fusi Pecci, & Robert T. Rood.* 571, 458 (2002)
- Discovery of an Edge-On Disk in the MBM 12 Young Association. *Ray Jayawardhana, K. L. Luhman, Paola D'Alessio, & John R. Stauffer.* 571, L51 (2002)
- The Central Binary and Surrounding Nebula of the Symbiotic Star V1016 Cygni. *C. Brocksopp, M. F. Bode, S. P. S. Eyres, M. M. Crocker, R. Davis, & A. R. Taylor.* 571, 947 (2002)
- Evolution and Geometry of Hot Spots in Supernova Remnant 1987A. *Ben E. K. Sugerman, Stephen S. Lawrence, Arlin P. S. Crofts, Patrice Bouchet, & Steve R. Heathcote.* 572, 209 (2002)
- Imaging and Spatially Resolved Spectroscopy of AFGL 2688 in the Thermal Infrared Region. *Miwa Goto, Naoto Kobayashi, Hiroshi Terada, & A. T. Tokunaga.* 572, 276 (2002)
- The Far-Ultraviolet Spectrum of TW Hydrae. I. Observations of H<sub>2</sub> Fluorescence. *Gregory J. Herczeg, Jeffrey L. Linsky, Jeff A. Valenti, Christopher M. Johns-Krull, & Brian E. Wood.* 572, 310 (2002)
- A Tidally Interacting Disk in the Young Triple System WL 20? *Mary Barsony, Thomas P. Greene, & Geoffrey A. Blake.* 572, L75 (2002)
- Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A. *Chun S. J. Pun, Eli Michael, Svetozar A. Zhekov, Richard McCray, Peter M. Garavich, Peter M. Challis, Robert P. Kirshner, E. Baron, David Branch, Roger A. Chevalier, Alexei V. Filippenko, Claes Fransson, Bruno Leibundgut, Peter Lundqvist, Nino Panagia, M. M. Phillips, Brian Schmidt, George Sonneborn, Nicholas B. Suntzeff, Lifan Wang, & J. Craig Wheeler.* 572, 906 (2002)
- A Wall of Dust around a Proto-Mira? *Albert A. Zijlstra & R. Weinberger.* 572, 1006 (2002)
- Looking for Pure Rotational H<sub>2</sub> Emission from Protoplanetary Disks. *Matthew J. Richter, Daniel T. Jaffe, Geoffrey A. Blake, & John H. Lacy.* 572, L161 (2002)
- STARS: CORONAE**
- Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 570, 799 (2002)
- Damping of Low-Frequency Alfvén Waves in Fast Polar Coronal Winds from the Rotating Sun. *Yu-Qing Lou.* 571, L187 (2002)
- Chandra and ASCA Observations of the X-Ray-brightest T Tauri Stars in the  $\rho$  Ophiuchi Cloud. *Kensuke Imanishi, Masahiro Tsujimoto, & Katsuji Koyama.* 572, 300 (2002)
- STARS: DWARF NOVAE**
- The Extraordinary Cataclysmic Binary RU Pegasi: The Hottest White Dwarf in a Dwarf Nova? *Edward M. Sion & Joel Urban.* 572, 456 (2002)
- STARS: EARLY-TYPE**
- Australia Telescope Compact Array Radio Imaging of the Proplyd-like Objects in the Giant H II Region NGC 3603. *A. Mücke, B. S. Koribalski, A. F. J. Moffat, M. F. Corcoran, & I. R. Stevens.* 571, 366 (2002)
- STARS: EVOLUTION**
- Structure, Evolution, and Nucleosynthesis of Primordial Stars. *Lionel Siess, Mario Livio, & John Lattanzio.* 570, 329 (2002)
- Detailed Analysis of Nearby Bulgelike Dwarf Stars. II. Lithium Abundances. *Luciana Pompéia, Beatriz Barbuy, Michel Grenon, & Bruno Vaz Castilho.* 570, 820 (2002)
- Study of Gamma-Ray Burst Binary Progenitors. *Krzysztof Belczynski, Tomasz Bulik, & Bronislaw Rudak.* 571, 394 (2002)
- Models of Metal-poor Stars with Gravitational Settling and Radiative Accelerations. II. The Age of the Oldest Stars. *Don A. Vandenberg, O. Richard, G. Michaud, & J. Richer.* 571, 487 (2002)
- Merger Sites of Double Neutron Stars and their Host Galaxies. *Krzysztof Belczynski, Tomasz Bulik, & Vassiliki Kalogera.* 571, L147 (2002)
- The Effects of Planets and Brown Dwarfs on Stellar Rotation and Mass Loss. *Mario Livio & Noam Soker.* 571, L161 (2002)
- An Infrared Ring Nebula around MSX5C G358.5391+00.1305: The True Nature of Suspected Planetary Nebula Wray 17-96 Determined via Direct Imaging and Spectroscopy. *Michael P. Egan, J. Simon Clark, Donald R. Mizuno, Sean J. Carey, Iain A. Steele, & Stephan D. Price.* 572, 288 (2002)

- A Comprehensive Study of Binary Compact Objects as Gravitational Wave Sources: Evolutionary Channels, Rates, and Physical Properties. *Krzysztof Belczynski, Vassiliki Kalogera, & Tomasz Bulik*. 572, 407 (2002)
- Are There Unstable Planetary Systems around White Dwarfs? *John H. Debes & Steinn Sigurdsson*. 572, 556 (2002)
- A Wall of Dust around a Proto-Mira? *Albert A. Zijlstra & R. Weinberger*. 572, 1006 (2002)
- On the Progenitor of the Type Ic Supernova 2002ap. *S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen*. 572, L147 (2002)
- STARS: FORMATION**
- The Scale-dependent Energy Transfer Rate as a Tracer for Star Formation in Cosmological N-Body Simulations. *M. Hoeft, J. P. Mücke, & P. Heide*. 570, 33 (2002)
- Enhancement of Ambipolar Diffusion Rates through Field Fluctuations. *Marco Fatuzzo & Fred C. Adams*. 570, 210 (2002)
- MERLIN Radio Detection of an Interaction Zone within a Binary Orion Proplyd System. *M. F. Graham, J. Meaburn, S. T. Garrington, T. J. O'Brien, W. J. Henney, & C. R. O'Dell*. 570, 222 (2002)
- Three-dimensional Simulations of the Gravitational Collapse of Logotropic Molecular Cloud Cores. *Michael A. Reid, Ralph E. Pudritz, & James Wadsley*. 570, 231 (2002)
- Understanding the Nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43. *Teresa Giannini, Brunella Nisini, Alessio Caratti o Garatti, & Dario Lorenzetti*. 570, L33 (2002)
- The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte*. 570, 708 (2002)
- Velocity-resolved [Fe II] Line Spectroscopy of L1551 IRS 5: A Partially Ionized Wind under Collimation around an Ionized Fast Jet. *Tae-Soo Pyo, Masahiko Hayashi, Naoto Kobayashi, Hiroshi Terada, Miwa Goto, Takiya Yamashita, Alan T. Tokunaga, & Yoichi Itoh*. 570, 724 (2002)
- Physical versus Observational Properties of Clouds in Turbulent Molecular Cloud Models. *Javier Ballesteros-Parades & Mordecai-Mark Mac Low*. 570, 734 (2002)
- Embedded Star Formation in the Eagle Nebula. *Rodger I. Thompson, Bradford A. Smith, & J. Jeff Hester*. 570, 749 (2002)
- The Formation of Massive Stars. I. High-Resolution Millimeter and Radio Studies of High-Mass Protostellar Candidates. *Sergio Molinari, Leonardo Testi, Luis F. Rodriguez, & Qichou Zhang*. 570, 758 (2002)
- Star Formation Rate From Dust Infrared Emission. *Akio K. Inoue*. 570, L97 (2002)
- $N_2H^+$  and  $C^{18}$  Depletion in a Cold Dark Cloud. *Edwin A. Bergin, João Alves, Tracy Huard, & Charles J. Lada*. 570, L101 (2002)
- High-Redshift Galaxies in the Cold Dark Matter Models. *David H. Weinberg, Lars Hernquist, & Neal Katz*. 571, 15 (2002)
- Magnetic Fields in Star-forming Molecular Clouds. IV. Polarimetry of the Filamentary NGC 2068 Cloud in Orion B. *Brenda C. Matthews & Christine D. Wilson*. 571, 356 (2002)
- Australia Telescope Compact Array Radio Imaging of the Proplyd-like Objects in the Giant H II Region NGC 3603. *A. Mücke, B. S. Koribalski, A. F. J. Moffat, M. F. Corcoran, & I. R. Stevens*. 571, 366 (2002)
- Variability of Southern T Tauri Stars. II. The Spectral Variability of the Classical T Tauri Star TW Hydrae. *Silvia H. P. Alencar & Celso Batalha*. 571, 378 (2002)
- Merger Sites of Double Neutron Stars and their Host Galaxies. *Krzysztof Belczynski, Tomasz Bulik, & Vassiliki Kalogera*. 571, L147 (2002)
- Flux-Velocity Relation for  $H_2$  Outflows. *Luis Salas & Irene Cruz-González*. 572, 227 (2002)
- A Tidally Interacting Disk in the Young Triple System WL 20? *Mary Barsony, Thomas P. Greene, & Geoffrey A. Blake*. 572, L75 (2002)
- STARS: FUNDAMENTAL PARAMETERS**
- Time-dependent Asymmetries in the Atmosphere of the Mira Variable R Trianguli through Infrared Interferometry. *R. R. Thompson, M. J. Creech-Eakman, & R. L. Akeson*. 570, 373 (2002)
- Three Type I X-Ray Bursts from Cygnus X-2: Application of Analytical Models for Neutron Star Mass and Radius Determination. *Lev Titarchuk & Nikolai Shaposhnikov*. 570, L25 (2002)
- Activity in Very Cool Stars: Magnetic Dissipation in Late M and L Dwarf Atmospheres. *Subhanjoy Mohanty, Gibor Basri, Frank Shu, France Allard, & Gilles Chabrier*. 571, 469 (2002)
- Evidence of Cloud Disruption in the L/T Dwarf Transition. *Adam J. Burgasser, Mark S. Marley, Andrew S. Ackerman, Didier Saumon, Katharina Lodders, Conrad C. Dahn, Hugh C. Harris, & J. Davy Kirkpatrick*. 571, L151 (2002)
- A Young Very Low Mass Object Surrounded by Warm Dust. *L. Testi, A. Natta, E. Oliva, F. D'Antona, F. Comerón, C. Baffa, G. Comoretto, & S. Gennari*. 571, L155 (2002)
- Correcting Parameters of Events Based on the Entropy of Microlensing Ensemble. *Piotr Popowski & Charles Alcock*. 572, 514 (2002)
- First Microlens Mass Measurement: PLANET Photometry of EROS BLG-2000-5. *Jin H. An, M. D. Albrow, J.-P. Beaulieu, J. A. R. Caldwell, D. L. DePoy, M. Dominik, B. S. Gaudi, A. Gould, J. Greenhill, K. Hill, S. Kane, R. Martin, J. Menzies, R. W. Pogge, K. R. Pollard, P. D. Sackett, K. C. Sahu, P. Vermaas, R. Watson, & A. Williams*. 572, 521 (2002)
- STARS: GENERAL**
- Nova Scorpii and Coalescing Low-Mass Black Hole Binaries as LIGO Sources. *Michael S. Sipior & Steinn Sigurdsson*. 572, 962 (2002)
- STARS: HERTZSPRUNG-RUSSELL DIAGRAM**
- Hubble Space Telescope/NICMOS Observations of Terzan 5: Stellar Content and Structure of the Core. *Haldan N. Cohn, Phyllis M. Luger, Jonathan E. Grindlay, & Peter D. Edmonds*. 571, 818 (2002)
- STARS: HORIZONTAL-BRANCH**
- Rotation of Hot Horizontal Branch Stars in the Globular Clusters NGC 1904, NGC 2808, NGC 6093, and NGC 7078. *Alejandra Recio-Blanco, Giampaolo Piotto, Antonio Aparicio, & Alvio Renzini*. 572, L71 (2002)
- STARS: IMAGING**
- Discovery of an Extremely Red Object in the Field of HD 155826. *C. Lisse, A. Schultz, Y. Fernandez, S. Pecsckke, M. Ressler, V. Gorjian, S. G. Djorgovski, D. J. Christian, B. Golisch, & C. Kaminski*. 570, 779 (2002)
- Possible Corotation of the Milliarcsecond Radio Structure of the Close Binary HR 1099. *R. R. Ransom, N. Bartel, M. F. Bietenholz, D. E. Lebach, M. I. Ratner, I. I. Shapiro, & J.-F. Lestrade*. 572, 487 (2002)
- STARS: INDIVIDUAL**
- Constellation Name:  $\upsilon$  Andromedae**
- A Distant Stellar Companion in the  $\upsilon$  Andromedae System. *Patrick J. Lowrance, J. Davy Kirkpatrick, & Charles A. Beichman*. 572, L79 (2002)
- Constellation Name: UX Arietis**
- Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree*. 570, 799 (2002)
- Constellation Name: 55 Cancri**
- New Submillimeter Limits on Dust in the 55 Cancri Planetary System. *Ray Jayawardhana, Wayne S. Holland, Paul Kalas, Jane S. Greaves, William R. F. Dent, Mark C. Wyatt, & Geoffrey W. Marcy*. 570, L93 (2002)
- Constellation Name:  $\beta$  Ceti**
- Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree*. 570, 799 (2002)
- Constellation Name: Circinus X-1**
- Variability of the X-Ray P Cygni Line Profiles from Circinus X-1 Near Zero Phase. *N. S. Schultz & W. N. Brandt*. 572, 971 (2002)
- Constellation Name: Cygnus X-1**
- The Soft Gamma-Ray Spectral Variability of Cygnus X-1. *M. L. McConnell, A. A. Zdziarski, K. Bennett, H. Bloemen, W. Collmar, W. Hermsen, L. Kuiper, W. Paciesas, B. F. Phillips, J. Poutanen, J. M. Ryan, V. Schönfelder, H. Steinle, & A. W. Strong*. 572, 984 (2002)
- Constellation Name: Cygnus X-2**
- Three Type I X-Ray Bursts from Cygnus X-2: Application of Analytical Models for Neutron Star Mass and Radius Determination. *Lev Titarchuk & Nikolai Shaposhnikov*. 570, L25 (2002)
- Constellation Name: CH Cygni**
- Searching for the Physical Drivers of Eigenvector 1: From Quasars to Nanoquasars. *R. Zammanov & P. Marziani*. 571, L77 (2002)
- Constellation Name: V404 Cygni**
- The X-Ray Spectra of Black Hole X-Ray Novae in Quiescence as Measured by Chandra. *Albert K. H. Kong, Jeffrey E. McClintock, Michael R. Garcia, Stephen S. Murray, & Didier Barret*. 570, 277 (2002)

**Constellation Name: V1016 Cygni**

The Central Binary and Surrounding Nebula of the Symbiotic Star V1016 Cygni. *C. Brocksopp, M. F. Bode, S. P. S. Eyres, M. M. Crocker, R. Davis, & A. R. Taylor.* 571, 947 (2002)

**Constellation Name: AB Doradus**

Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 570, 799 (2002)

**Constellation Name:  $\epsilon$  Eridani**

First High-Contrast Imaging Using a Gaussian Aperture Pupil Mask. *John H. Debes, Jian Ge, & Abhijit Chakraborty.* 572, L165 (2002)

**Constellation Name:  $\sigma$  Geminorum**

Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 570, 799 (2002)

**Constellation Name: TW Hydrae**

The Far-Ultraviolet Spectrum of TW Hydrae. I. Observations of H<sub>2</sub> Fluorescence. *Gregory J. Herczeg, Jeffrey L. Linsky, Jeff A. Valenti, Christopher M. Johns-Krull, & Brian E. Wood.* 572, 310 (2002)

**Constellation Name:  $\chi$  Lupi**

Ultraviolet C I Lines in the HgMn Star  $\chi$  Lupi. *Charles R. Proffitt.* 571, 955 (2002)

**Constellation Name: II Pegasi**

Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 570, 799 (2002)

**Constellation Name: RU Pegasi**

The Extraordinary Cataclysmic Binary RU Pegasi: The Hottest White Dwarf in a Dwarf Nova? *Edward M. Sion & Joel Urban.* 572, 456 (2002)

**Constellation Name: Scorpius X-1**

Can Any "Invariants" Be Revealed in Quasi-periodic Phenomena Observed from Scorpius X-1? *Sergey Kuznetsov & Lev Titarchuk.* 571, L137 (2002)

**Constellation Name: GG Tauri**

Hubble Space Telescope/WFPC2 Images of the GG Tauri Circumbinary Disk. *John E. Krist, Karl R. Stapelfeldt, & Alan M. Watson.* 570, 785 (2002)

**Constellation Name: V711 Tauri**

Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 570, 799 (2002)

Possible Corotation of the Milliarcsecond Radio Structure of the Close Binary HR 1099. *R. R. Ransom, N. Bartel, M. F. Bietenholz, D. E. Lebach, M. I. Ratner, I. I. Shapiro, & J.-F. Lestrade.* 572, 487 (2002)

**Constellation Name: R Trianguli**

Time-dependent Asymmetries in the Atmosphere of the Mira Variable R Trianguli through Infrared Interferometry. *R. R. Thompson, M. J. Creech-Eakman, & R. L. Akeson.* 570, 373 (2002)

**Bright Star Number: HR 7672**

Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. *Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler.* 571, 519 (2002)

**Henry Draper Number: HD 142**

Two Extrasolar Planets from the Anglo-Australian Planet Search. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, & Brad D. Carter.* 571, 528 (2002)

**Henry Draper Number: HD 23079**

Two Extrasolar Planets from the Anglo-Australian Planet Search. *C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, & Brad D. Carter.* 571, 528 (2002)

**Henry Draper Number: HD 82943**

A Critical Examination of Li Pollution and Giant-Planet Consumption by a Host Star. *Eric L. Sandquist, Jon J. Dokter, D. N. C. Lin, & Rosemary A. Marling.* 572, 1012 (2002)

**Henry Draper Number: HD 155826**

Discovery of an Extremely Red Object in the Field of HD 155826. *C. Lisse, A. Schultz, Y. Fernandez, S. Pecsckke, M. Ressler, V. Gorjian, S. G. Djorgovski, D. J. Christian, B. Golisch, & C. Kaminski.* 570, 779 (2002)

**Henry Draper Number: HD 161797**

First High-Contrast Imaging Using a Gaussian Aperture Pupil Mask. *John H. Debes, Jian Ge, & Abhijit Chakraborty.* 572, L165 (2002)

**Henry Draper Number: HD 165688**

XMM-Newton Detection of Hard X-Ray Emission in the Nitrogen-Type Wolf-Rayet Star WR 110. *Stephen L. Skinner, Svetozar A. Zhekov, Manuel Güdel, & Werner Schmutz.* 572, 477 (2002)

**Name: Capella**

Hydrogen Column Density Evaluations toward Capella: Consequences on the Interstellar Deuterium Abundance. *A. Vidal-Madjar & R. Ferlet.* 571, L169 (2002)

**Name: Deneb**

The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. *J. P. Aufdenberg, P. H. Hauschildt, E. Baron, T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry.* 570, 344 (2002)

**Name: Elias 29**

The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. *A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte.* 570, 708 (2002)

**Alphanumeric: A0620-00**

The X-Ray Spectra of Black Hole X-Ray Novae in Quiescence as Measured by Chandra. *Albert K. H. Kong, Jeffrey E. McClintock, Michael R. Garcia, Stephen S. Murray, & Didier Barret.* 570, 277 (2002)

**Alphanumeric: DoAr 21**

Chandra and ASCA Observations of the X-Ray-brightest T Tauri Stars in the  $\rho$  Ophiuchi Cloud. *Kensuke Imanishi, Masahiro Tsujimoto, & Katsuji Koyama.* 572, 300 (2002)

**Alphanumeric: GJ 876**

The Dynamical Simulations of the Planets Orbiting GJ 876. *Jianghui Ji, Guangyu Li, & Lin Liu.* 572, 1041 (2002)

**Alphanumeric: GRO J1655-40**

The X-Ray Spectra of Black Hole X-Ray Novae in Quiescence as Measured by Chandra. *Albert K. H. Kong, Jeffrey E. McClintock, Michael R. Garcia, Stephen S. Murray, & Didier Barret.* 570, 277 (2002)

**Alphanumeric: GRS 1915+105**

Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105. *Y. Ueda, K. Yamaoka, C. Sánchez-Fernández, V. Dhawan, S. Chaty, J. E. Grove, M. McCollough, A. J. Castro-Tirado, F. Mirabel, K. Kohno, M. Feroci, P. Casella, S. A. Trushkin, H. Castaneda, J. Rodríguez, P. Durouchoux, K. Ebisawa, T. Kotani, J. Swank, & H. Inoue.* 571, 918 (2002)

**Alphanumeric: GX 13+1**

Infrared Photometric Variability of GX 13+1 and GX 17+2. *Reba M. Bandyopadhyay, Philip A. Charles, Tariq Shahbaz, & R. Mark Wagner.* 570, 793 (2002)

**Alphanumeric: GX 17+2**

Infrared Photometric Variability of GX 13+1 and GX 17+2. *Reba M. Bandyopadhyay, Philip A. Charles, Tariq Shahbaz, & R. Mark Wagner.* 570, 793 (2002)

**Alphanumeric: IRAS 02091+6333**

A Wall of Dust around a Proto-Mira? *Albert A. Zijlstra & R. Weinberger.* 572, 1006 (2002)

**Alphanumeric: MWC 560**

Searching for the Physical Drivers of Eigenvector 1: From Quasars to Nanoquasars. *R. Zamanov & P. Marziani.* 571, L77 (2002)

**Alphanumeric: ROX 21**

Chandra and ASCA Observations of the X-Ray-brightest T Tauri Stars in the  $\rho$  Ophiuchi Cloud. *Kensuke Imanishi, Masahiro Tsujimoto, & Katsuji Koyama.* 572, 300 (2002)

**Alphanumeric: ROX 31**

Chandra and ASCA Observations of the X-Ray-brightest T Tauri Stars in the  $\rho$  Ophiuchi Cloud. *Kensuke Imanishi, Masahiro Tsujimoto, & Katsuji Koyama.* 572, 300 (2002)

**Alphanumeric: RX J1856.5-3754**

A Deep Search for Pulsations from the Nearby Isolated Neutron Star RX J1856.5-3754. *Scott M. Ransom, Bryan M. Gaensler, & Patrick O. Slane.* 570, L75 (2002)

The Parallax and Proper Motion of RX J1856.5-3754 Revisited. *D. L. Kaplan, M. H. van Kerkwijk, & J. Anderson.* 571, 447 (2002)

- Is RX J1856.5—3754 a Quark Star? *Jeremy J. Drake, Herman L. Marshall, Stefan Dreizler, Peter E. Freeman, Antonella Fruscione, Michael Juda, Vinay Kasyap, Fabrizio Nicastro, Deron O. Pease, Bradford J. Wargelin, & Klaus Werner.* 572, 996 (2002)
- Alphanumeric: SAX J1808.4—3658**
- Very Low Luminosities from the Accretion-driven Millisecond X-Ray Pulsar SAX J1808.4—3658 during Quiescence. *Rudy Wijmans, Lucien Kuiper, Jean in 't Zand, Tadayasu Dotani, Michiel van der Klis, & John Heise.* 571, 429 (2002)
- Alphanumeric: WL 20**
- A Tidally Interacting Disk in the Young Triple System WL 20? *Mary Barsony, Thomas P. Greene, & Geoffrey A. Blake.* 572, L75 (2002)
- Alphanumeric: X1732—304**
- A Chandra Observation of the Globular Cluster Terzan 1: The Neutron Star X-Ray Transient X1732-304 in Quiescence. *Rudy Wijmans, Craig O. Heinke, & Jonathan E. Grindlay.* 572, 1002 (2002)
- Alphanumeric: XTE J1550—564**
- The X-Ray Spectra of Black Hole X-Ray Novae in Quiescence as Measured by Chandra. *Albert K. H. Kong, Jeffrey E. McClintock, Michael R. Garcia, Stephen S. Murray, & Didier Barret.* 570, 277 (2002)
- STARS: INTERIORS**
- Structure, Evolution, and Nucleosynthesis of Primordial Stars. *Lionel Siess, Mario Livio, & John Lattanzio.* 570, 329 (2002)
- Penetration and Overshooting in Turbulent Compressible Convection. *Nicholas H. Brummell, Thomas L. Clune, & Juri Toomre.* 570, 825 (2002)
- From Penetrative Convection to Teleconvection. *Keke Zhang & Gerald Schubert.* 572, 461 (2002)
- STARS: LATE-TYPE**
- Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 570, 799 (2002)
- Detailed Analysis of Nearby Bulgelike Dwarf Stars. II. Lithium Abundances. *Luciana Pompéia, Beatriz Barbui, Michel Grenon, & Bruno Vaz Castilho.* 570, 820 (2002)
- Orbital Stability of Terrestrial Planets inside the Habitable Zones of Extrasolar Planetary Systems. *M. Noble, Z. E. Musielak, & M. Cuntz.* 572, 1024 (2002)
- STARS: LOW-MASS, BROWN DWARFS**
- Mass Segregation in Globular Clusters. *J. M. Fregeau, K. J. Joshi, S. F. Portegies Zwart, & F. A. Rasio.* 570, 171 (2002)
- Activity in Very Cool Stars: Magnetic Dissipation in Late M and L Dwarf Atmospheres. *Subhanjoy Mohanty, Gabor Basri, Frank Shu, France Allard, & Gilles Chabrier.* 571, 469 (2002)
- Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. *Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler.* 571, 519 (2002)
- Evidence of Cloud Disruption in the L/T Dwarf Transition. *Adam J. Burgasser, Mark S. Marley, Andrew S. Ackerman, Didier Saumon, Katharina Lodders, Conrad C. Dahn, Hugh C. Harris, & J. Davy Kirkpatrick.* 571, L151 (2002)
- A Young Very Low Mass Object Surrounded by Warm Dust. *L. Testi, A. Natta, E. Oliva, F. D'Antona, F. Comerón, C. Buffa, G. Comoretto, & S. Gennari.* 571, L155 (2002)
- Flaring up All Over—Radio Activity in Rapidly Rotating Late M and L Dwarfs. *E. Berger.* 572, 503 (2002)
- A Distant Stellar Companion in the  $\nu$  Andromedae System. *Patrick J. Lowrance, J. Davy Kirkpatrick, & Charles A. Beichman.* 572, L79 (2002)
- First High-Contrast Imaging Using a Gaussian Aperture Pupil Mask. *John H. Debes, Jian Ge, & Abhijit Chakraborty.* 572, L165 (2002)
- STARS: MAGNETIC FIELDS**
- X-Ray Emission from Central Binary Systems of Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 570, 245 (2002)
- Activity in Very Cool Stars: Magnetic Dissipation in Late M and L Dwarf Atmospheres. *Subhanjoy Mohanty, Gabor Basri, Frank Shu, France Allard, & Gilles Chabrier.* 571, 469 (2002)
- The Effects of Planets and Brown Dwarfs on Stellar Rotation and Mass Loss. *Mario Livio & Noam Soker.* 571, L161 (2002)
- Partial Field Opening and Current Sheet Formation in the Disk Magnetosphere. *Dmitri A. Uzdensky.* 572, 432 (2002)
- Flaring up All Over—Radio Activity in Rapidly Rotating Late M and L Dwarfs. *E. Berger.* 572, 503 (2002)
- Dynamical Quenching of the  $\alpha^2$  Dynamo. *George B. Field & Eric G. Blackman.* 572, 685 (2002)
- STARS: MASS LOSS**
- X-Ray Emission from Central Binary Systems of Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 570, 245 (2002)
- On the Formation of Multiple Arcs around Asymptotic Giant Branch Stars. *Noam Soker.* 570, 369 (2002)
- Understanding the Nature of Protostellar Jets through Near-Infrared Spectroscopy: The Key Role of the J Band Proved on HH 43. *Teresa Giannini, Brunella Nisini, Alessio Caratti o Garatti, & Dario Lorenzetti.* 570, L33 (2002)
- Detection of X-Ray Emission from the Arches Cluster near the Galactic Center. *F. Yusef-Zadeh, C. Law, M. Wardle, Q. D. Wang, A. Fruscione, C. C. Lang, & A. Cotera.* 570, 665 (2002)
- Mid-Infrared Observation of Mass Loss in Elliptical Galaxies. *Alex Athey, Joel Bregman, Jesse Bregman, Pasquale Temi, & Marc Sauvage.* 571, 272 (2002)
- ISOCAM Observations of Galactic Globular Clusters: Mass Loss along the Red Giant Branch. *Livia Origlia, Francesco R. Ferraro, Flavio Fusi Pecci, & Robert T. Rood.* 571, 458 (2002)
- The Dynamical Evolution of the Circumstellar Gas around Low- and Intermediate-Mass Stars. I. The Asymptotic Giant Branch. *Eva Villaver, Guillermo García-Segura, & Arturo Manchado.* 571, 880 (2002)
- Two Subclasses of Proto-Planetary Nebulae: Model Calculations. *Margaret Meixner, Toshiya Ueta, Matthew Bobrowsky, & Angela Speck.* 571, 936 (2002)
- The Effects of Planets and Brown Dwarfs on Stellar Rotation and Mass Loss. *Mario Livio & Noam Soker.* 571, L161 (2002)
- XMM-Newton Detection of Hard X-Ray Emission in the Nitrogen-Type Wolf-Rayet Star WR 110. *Stephen L. Skinner, Svetozar A. Zhekov, Manuel Güdel, & Werner Schmutz.* 572, 477 (2002)
- Are There Unstable Planetary Systems around White Dwarfs? *John H. Debes & Steinn Sigurdsson.* 572, 556 (2002)
- X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S. *David Pooley, Walter H. G. Lewin, Derek W. Fox, Jon M. Miller, Christina K. Lacey, Schuyler D. Van Dyk, Kurt W. Weiler, Richard A. Sramek, Alexei V. Filippenko, Douglas C. Leonard, Stefan Immler, Roger A. Chevalier, Andrew C. Fabian, Claes Fransson, & Ken'ichi Nomoto.* 572, 932 (2002)
- STARS: NEUTRON**
- A Decade in the Life of EXO 2030+375: A Multiwavelength Study of an Accreting X-Ray Pulsar. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, Silas Laycock, & J. Fabregat.* 570, 287 (2002)
- Numerical Models of Binary Neutron Star System Mergers. II. Coalescing Models with Post-Newtonian Radiation Reaction Forces. *Alan C. Calder & Edward Y. M. Wang.* 570, 303 (2002)
- Three Type I X-Ray Bursts from Cygnus X-2: Application of Analytical Models for Neutron Star Mass and Radius Determination. *Lev Titarchuk & Nikolai Shaposhnikov.* 570, L25 (2002)
- A Thermal Featureless Spectrum: Evidence for Bare Strange Stars? *R. X. Xu.* 570, L65 (2002)
- A Deep Search for Pulsations from the Nearby Isolated Neutron Star RX J1856.5—3754. *Scott M. Ransom, Bryan M. Gaensler, & Patrick O. Slane.* 570, L75 (2002)
- X-Ray Timing of the Enigmatic Neutron Star RX J0720.4—3125. *D. L. Kaplan & S. R. Kulkarni.* 570, L79 (2002)
- The Case of PSR J1911—5958A in the Outskirts of NGC 6752: Signature of a Black Hole Binary in the Cluster Core? *Monica Colpi, Andrea Possenti, & Alessia Gualandris.* 570, L85 (2002)
- Study of Gamma-Ray Burst Binary Progenitors. *Krzysztof Belczynski, Tomasz Bulik, & Bronislaw Rudak.* 571, 394 (2002)
- Very Low Luminosities from the Accretion-driven Millisecond X-Ray Pulsar SAX J1808.4—3658 during Quiescence. *Rudy Wijmans, Lucien Kuiper, Jean in 't Zand, Tadayasu Dotani, Michiel van der Klis, & John Heise.* 571, 429 (2002)
- Nonlinear Couplings between  $r$ -Modes of Rotating Neutron Stars. *Sharon M. Morsink.* 571, 435 (2002)
- The Parallax and Proper Motion of RX J1856.5—3754 Revisited. *D. L. Kaplan, M. H. van Kerkwijk, & J. Anderson.* 571, 447 (2002)
- On the Population of Wind-Accreting Neutron Stars in the Galaxy. *Eric Pfahl, Sual Rappaport, & Phillip Podsiadlowski.* 571, L37 (2002)



- New Constraints on Neutron Star Cooling from *Chandra* Observations of 3C 58. Patrick O. Slane, David J. Helfand, & Stephen S. Murray. 571, L45 (2002)
- Transient X-Ray Binaries in Elliptical Galaxies. Anthony L. Piro & Lars Bildsten. 571, L103 (2002)
- Can Any "Invariants" Be Revealed in Quasi-periodic Phenomena Observed from Scorpius X-1? Sergey Kuznetsov & Lev Titarchuk. 571, L137 (2002)
- Confronting Neutron Star Cooling Theories with New Observations. S. Tsuruta, M. A. Teter, T. Takatsuka, T. Tatsumi, & R. Tamagaki. 571, L143 (2002)
- Merger Sites of Double Neutron Stars and their Host Galaxies. Krzysztof Belczynski, Tomasz Bulik, & Vassiliki Kalogera. 571, L147 (2002)
- A Unified Description of the Timing Features of Accreting X-Ray Binaries. Tomaso Belloni, Dimitrios Psaltis, & Michiel van der Klis. 572, 392 (2002)
- A Comprehensive Study of Binary Compact Objects as Gravitational Wave Sources: Evolutionary Channels, Rates, and Physical Properties. Krzysztof Belczynski, Vassiliki Kalogera, & Tomasz Bulik. 572, 407 (2002)
- Photo Splitting in the Superstrong Magnetic Fields of Pulsars. Vladimir V. Usov. 572, L87 (2002)
- Searching for Failed Supernovae with Astrometric Binaries. Andrew Gould & Samir Salim. 572, 944 (2002)
- Variability of the X-Ray P Cygni Line Profiles from Circinus X-1 Near Zero Phase. N. S. Schulz & W. N. Brandt. 572, 971 (2002)
- Is RX J1856.5-3754 a Quark Star? Jeremy J. Drake, Herman L. Marshall, Stefan Dreizler, Peter E. Freeman, Antonella Fruscione, Michael Juda, Vinay Kasyap, Fabrizio Nicastro, Deron O. Pease, Bradford J. Wargelin, & Klaus Werner. 572, 996 (2002)
- STARS: NOVAE, CATAclysmic VARIABLES**
- Will Jets Identify the Progenitors of Type Ia Supernovae? Mario Livio, Adam Riess, & William Sparks. 571, L99 (2002)
- Resonance Line Profile Calculations Based on Hydrodynamical Models of Cataclysmic Variable Winds. Daniel Proga, Timothy R. Kallman, Janet E. Drew, & Louise E. Hartley. 572, 382 (2002)
- STARS: OSCILLATIONS**
- Nonlinear Couplings between  $r$ -Modes of Rotating Neutron Stars. Sharon M. Morsink. 571, 435 (2002)
- A Unified Description of the Timing Features of Accreting X-Ray Binaries. Tomaso Belloni, Dimitrios Psaltis, & Michiel van der Klis. 572, 392 (2002)
- STARS: PLANETARY SYSTEMS**
- Mass Segregation in Globular Clusters. J. M. Fregeau, K. J. Joshi, S. F. Portegies Zwart, & F. A. Rasio. 570, 171 (2002)
- A Coronagraph with a Band-limited Mask for Finding Terrestrial Planets. Marc J. Kuchner & Wesley A. Traub. 570, 900 (2002)
- New Submillimeter Limits on Dust in the 55 Cancri Planetary System. Ray Jayawardhana, Wayne S. Holland, Paul Kalas, Jane S. Greaves, William R. F. Dent, Mark C. Wyatt, & Geoffrey W. Marcy. 570, L93 (2002)
- Two Extrasolar Planets from the Anglo-Australian Planet Search. C. G. Tinney, R. Paul Butler, Geoffrey W. Marcy, Hugh R. A. Jones, Alan J. Penny, Chris McCarthy, & Brad D. Carter. 571, 528 (2002)
- The Effects of Planets and Brown Dwarfs on Stellar Rotation and Mass Loss. Mario Livio & Noam Soker. 571, L161 (2002)
- Fixed Delay Interferometry for Doppler Extrasolar Planet Detection. Jian Ge. 571, L165 (2002)
- Atmospheric Lensing and Oblateness Effects during an Extrasolar Planetary Transit. Lam Hui & Sara Seager. 572, 540 (2002)
- Planet Migration and Gap Formation by Tidally Induced Shocks. R. R. Rafikov. 572, 566 (2002)
- A Distant Stellar Companion in the  $\nu$  Andromedae System. Patrick J. Lowrance, J. Davy Kirkpatrick, & Charles A. Beichman. 572, L79 (2002)
- Models of Planets and Brown Dwarfs in Mira Winds. Curtis Struck, Babak E. Cohan, & Lee Anne Willson. 572, L83 (2002)
- A Critical Examination of Li Pollution and Giant-Planet Consumption by a Host Star. Eric L. Sandquist, Jon J. Dokter, D. N. C. Lin, & Rosemary A. Marling. 572, 1012 (2002)
- Orbital Stability of Terrestrial Planets inside the Habitable Zones of Extrasolar Planetary Systems. M. Noble, Z. E. Musielak, & M. Cuntz. 572, 1024 (2002)
- A Short, Nonplanetary, Microlensing Anomaly: Observations and Light-Curve Analysis of MACHO 99-BLG-47. M. D. Albrow, J. An, J.-P. Beaulieu, J. A. R. Caldwell, D. L. DePoy, M. Dominik, B. S. Gaudi, A. Gould, J. Greenhill, K. Hill, S. Kane, R. Martin, J. Menzies, R. W. Pogge, K. R. Pollard, P. D. Sackett, K. C. Sahu, P. Vermaak, R. Watson, & A. Williams (The PLANET Collaboration). 572, 1031 (2002)
- The Dynamical Simulations of the Planets Orbiting GJ 876. Jianghui Ji, Guangyu Li, & Lin Liu. 572, 1041 (2002)
- STARS: PLANETARY SYSTEMS: FORMATION**
- Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler. 571, 519 (2002)
- Are There Unstable Planetary Systems around White Dwarfs? John H. Debes & Steinn Sigurdsson. 572, 556 (2002)
- Planet Migration and Gap Formation by Tidally Induced Shocks. R. R. Rafikov. 572, 566 (2002)
- A Critical Examination of Li Pollution and Giant-Planet Consumption by a Host Star. Eric L. Sandquist, Jon J. Dokter, D. N. C. Lin, & Rosemary A. Marling. 572, 1012 (2002)
- STARS: PLANETARY SYSTEMS: PROTOPLANETARY DISKS**
- Candidate Pre-Main-Sequence F Stars with Circumstellar Dust Identified Using Combined 2MASS and *uvby* Data. A. A. Suchkov, A. B. Schultz, & C. M. Lisse. 570, L29 (2002)
- Discovery of an Extremely Red Object in the Field of HD 155826. C. Lisse, A. Schultz, Y. Fernandez, S. Pecsckhe, M. Ressler, V. Gorjian, S. G. Djorgovski, D. J. Christian, B. Golisch, & C. Kaminski. 570, 779 (2002)
- Looking for Pure Rotational H<sub>2</sub> Emission from Protoplanetary Disks. Matthew J. Richter, Daniel T. Jaffe, Geoffrey A. Blake, & John H. Lacy. 572, L161 (2002)
- STARS: POPULATION II**
- ISOCAM Observations of Galactic Globular Clusters: Mass Loss along the Red Giant Branch. Livia Origlia, Francesco R. Ferraro, Flavio Fusi Pecci, & Robert T. Rood. 571, 458 (2002)
- Models of Metal-poor Stars with Gravitational Settling and Radiative Accelerations. II. The Age of the Oldest Stars. Don A. Vandenberg, O. Richard, G. Michaud, & J. Richer. 571, 487 (2002)
- Rapid Rotation of Ultra-Li-depleted Halo Stars and Their Associations with Blue Stragglers. Sean G. Ryan, Scott G. Gregory, Ulrich Kolb, Timothy C. Beers, & Toshitaka Kajino. 571, 501 (2002)
- The Chemical Composition and Age of the Metal-poor Halo Star BD +17°3248. John J. Cowan, Christopher Sneden, Scott Burles, Inese I. Ivans, Timothy C. Beers, James W. Truran, James E. Lawler, Francesca Primas, George M. Fuller, Bernd Pfeiffer, & Karl-Ludwig Kratz. 572, 861 (2002)
- STARS: PRE-MAIN-SEQUENCE**
- Candidate Pre-Main-Sequence F Stars with Circumstellar Dust Identified Using Combined 2MASS and *uvby* Data. A. A. Suchkov, A. B. Schultz, & C. M. Lisse. 570, L29 (2002)
- Discovery of an Extremely Red Object in the Field of HD 155826. C. Lisse, A. Schultz, Y. Fernandez, S. Pecsckhe, M. Ressler, V. Gorjian, S. G. Djorgovski, D. J. Christian, B. Golisch, & C. Kaminski. 570, 779 (2002)
- Hubble Space Telescope/WFPC2 Images of the GG Tauri Circumbinary Disk. John E. Krist, Karl R. Stapelfeldt, & Alan M. Watson. 570, 785 (2002)
- Australia Telescope Compact Array Radio Imaging of the Proplyd-like Objects in the Giant H II Region NGC 3603. A. Mücke, B. S. Koribalski, A. F. J. Moffat, M. F. Corcoran, & I. R. Stevens. 571, 366 (2002)
- Variability of Southern T Tauri Stars. II. The Spectral Variability of the Classical T Tauri Star TW Hydrae. Silvia H. P. Alencar & Celso Batalha. 571, 378 (2002)
- Discovery of an Edge-On Disk in the MBM 12 Young Association. Ray Jayawardhana, K. L. Luhman, Paola D'Alessio, & John R. Stauffer. 571, L51 (2002)
- The Nature of the Cluster of Radio Sources in GGD 14. Y. Gómez, L. F. Rodríguez, & G. Garay. 571, 901 (2002)
- Chandra* and ASCA Observations of the X-Ray-brightest T Tauri Stars in the  $\rho$  Ophiuchi Cloud. Kensuke Imanishi, Masahiro Tsujimoto, & Katsuji Koyama. 572, 300 (2002)
- The Far-Ultraviolet Spectrum of TW Hydrae. I. Observations of H<sub>2</sub> Fluorescence. Gregory J. Herczeg, Jeffrey L. Linsky, Jeff A. Valenti, Christopher M. Johns-Krull, & Brian E. Wood. 572, 310 (2002)

Magnetic Flaring in the Pre-Main-Sequence Sun and Implications for the Early Solar System. *Eric D. Feigelson, Gordon P. Garmire, & Steven H. Pravdo.* 572, 335 (2002)

A Tidally Interacting Disk in the Young Triple System WL 20? *Mary Barsony, Thomas P. Greene, & Geoffrey A. Blake.* 572, L75 (2002)

Looking for Pure Rotational H<sub>2</sub> Emission from Protoplanetary Disks. *Matthew J. Richter, Daniel T. Jaffe, Geoffrey A. Blake, & John H. Lacy.* 572, L161 (2002)

# STARS: PULSARS: GENERAL

Counterclockwise Magnetic Fields in the Norma Spiral Arm. *J. L. Han, R. N. Manchester, A. G. Lyne, & G. J. Qiao.* 570, L17 (2002)

A Thermal Featureless Spectrum: Evidence for Bare Strange Stars? *R. X. Xu.* 570, L65 (2002)

Millisecond Pulsars as Probes of Mass Segregation in the Galactic Center. *Julio Chanamé & Andrew Gould.* 571, 320 (2002)

Very Long Baseline Array Measurement of Nine Pulsar Parallaxes. *Walter F. Brisken, John M. Benson, W. M. Goss, & S. E. Thorsett.* 571, 906 (2002)

Photo Splitting in the Superstrong Magnetic Fields of Pulsars. *Vladimir V. Usov.* 572, L87 (2002)

Radio Pulses through a Magnetized Relativistic Pair Plasma Flow. *Yu-Qing Lou.* 572, L91 (2002)

# STARS: PULSARS: INDIVIDUAL

## Alphanumeric: EXO 2030+375

A Decade in the Life of EXO 2030+375: A Multiwavelength Study of an Accreting X-Ray Pulsar. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, Silas Laycock, & J. Fabregat.* 570, 287 (2002)

## Alphanumeric: GRO J1744–28

Transient X-Ray Binaries in Elliptical Galaxies. *Anthony L. Piro & Lars Bildsten.* 571, L103 (2002)

## Alphanumeric: PSR J0205+6449

Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope. *F. Camilo, I. H. Stairs, D. R. Lorimer, D. C. Backer, S. M. Ransom, B. Klein, R. Wielebinski, M. Kramer, M. A. McLaughlin, Z. Arzumanyan, & P. Muller.* 571, L41 (2002)

New Constraints on Neutron Star Cooling from Chandra Observations of 3C 58. *Patrick O. Slane, David J. Helfand, & Stephen S. Murray.* 571, L45 (2002)

## Alphanumeric: PSR J1811–1925

Spectral Components of the Radio Composite Supernova Remnant G11.2–0.3. *Cindy Tam, Mallory S. E. Roberts, & Victoria M. Kaspi.* 572, 202 (2002)

## Alphanumeric: PSR J1910–5959B

Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian.* 570, L89 (2002)

## Alphanumeric: PSR J1910–5959D

Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian.* 570, L89 (2002)

## Alphanumeric: PSR J1911–5958A

The Case of PSR J1911–5958A in the Outskirts of NGC 6752: Signature of a Black Hole Binary in the Cluster Core? *Monica Colpi, Andrea Possenti, & Alessia Gualandris.* 570, L85 (2002)

Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian.* 570, L89 (2002)

## Alphanumeric: PSR J1911–6000C

Timing of Millisecond Pulsars in NGC 6752: Evidence for a High Mass-to-Light Ratio in the Cluster Core. *N. D'Amico, A. Possenti, L. Fici, R. N. Manchester, A. G. Lyne, F. Camilo, & J. Sarkissian.* 570, L89 (2002)

## Alphanumeric: RX J0720–3125

X-Ray Timing of the Enigmatic Neutron Star RX J0720.4–3125. *D. L. Kaplan & S. R. Kulkarni.* 570, L79 (2002)

# STARS: ROTATION

Nonlinear Couplings between *r*-Modes of Rotating Neutron Stars. *Sharon M. Morsink.* 571, 435 (2002)

Rapid Rotation of Ultra-Li-depleted Halo Stars and Their Associations with Blue Stragglers. *Sean G. Ryan, Scott G. Gregory, Ulrich Kolb, Timothy C. Beers, & Toshiaki Kajino.* 571, 501 (2002)

Collapse of a Rotating Supermassive Star to a Supermassive Black Hole: Fully Relativistic Simulations. *Masaru Shibata & Stuart L. Shapiro.* 572, L39 (2002)

Rotation of Hot Horizontal Branch Stars in the Globular Clusters NGC 1904, NGC 2808, NGC 6093, and NGC 7078. *Alejandra Recio-Blanco, Giampaolo Piotto, Antonio Aparicio, & Alvio Renzini.* 572, L71 (2002)

# STARS: STATISTICS

A Determination of the Local Density of White Dwarf Stars. *J. B. Holberg, Terry D. Oswalt, & E. M. Sion.* 571, 512 (2002)

The Effects of Planets and Brown Dwarfs on Stellar Rotation and Mass Loss. *Mario Livio & Noam Soker.* 571, L161 (2002)

# STARS: SUPERNOVAE: GENERAL

The Influence of Electron Temperature and Magnetic Field Strength on Cosmic-Ray Injection in High Mach Number Shocks. *H. Schmitz, S. C. Chapman, & R. O. Dendy.* 570, 637 (2002)

Early Metal Enrichment by Pregalactic Outflows. II. Three-dimensional Simulations of Blow-Away. *Masao Mori, Andrea Ferrara, & Piero Madau.* 571, 40 (2002)

Star Clusters as Type Ia Supernova Factories. *Michael M. Shara & Jarrod R. Hurley.* 571, 830 (2002)

History of Milky Way Dwarf Spheroidal Galaxies Imprinted on Abundance Patterns of Neutron-Capture Elements. *Takuji Tsujimoto & Toshikazu Shigeyama.* 571, L93 (2002)

Will Jets Identify the Progenitors of Type Ia Supernovae? *Mario Livio, Adam Riess, & William Sparks.* 571, L99 (2002)

Detection of a Supernova Signature Associated with GRB 011121. *J. S. Bloom, S. R. Kulkarni, P. A. Price, D. E. Reichart, T. J. Galama, B. P. Schmidt, D. A. Frail, E. Berger, P. J. McCarthy, R. A. Chevalier, J. C. Wheeler, J. P. Halpern, D. W. Fox, S. G. Djorgovski, F. A. Harrison, R. Sari, T. S. Axelrod, R. A. Kimble, J. Holtzman, K. Hurley, F. Frontera, L. Piro, & E. Costa.* 572, L45 (2002)

The Type Ic Hypervnova SN 2002ap. *P. A. Mazzali, J. Deng, K. Maeda, K. Nomoto, H. Umeda, K. Hatanaka, K. Iwamoto, Y. Yoshii, Y. Kobayashi, T. Minezaki, M. Doi, K. Enya, H. Tomita, S. J. Smartt, K. Kingugasa, H. Kawakita, K. Ayani, T. Kawabata, H. Yamaoka, Y. L. Qiu, K. Motohara, C. L. Gerardy, R. Fesen, K. S. Kawabata, M. Iye, N. Kashikawa, G. Kosugi, Y. Ohya, M. Takada-Hidai, G. Zhao, R. Chornock, A. V. Filippenko, S. Benetti, & M. Turatto.* 572, L61 (2002)

Searching for Failed Supernovae with Astrometric Binaries. *Andrew Gould & Samir Salim.* 572, 944 (2002)

Is There a 1998bw-like Supernova in the Afterglow of Gamma-Ray Burst 011121? *Shlomo Dado, Arnon Dar, & A. De Rújula.* 572, L143 (2002)

# STARS: SUPERNOVAE: INDIVIDUAL

## Alphanumeric: G11.2–0.3

Spectral Components of the Radio Composite Supernova Remnant G11.2–0.3. *Cindy Tam, Mallory S. E. Roberts, & Victoria M. Kaspi.* 572, 202 (2002)

## Alphanumeric: SN 1987A

Evolution and Geometry of Hot Spots in Supernova Remnant 1987A. *Ben E. K. Sugerman, Stephen S. Lawrence, Arlin P. S. Crotts, Patrice Bouchet, & Steve R. Heathcote.* 572, 209 (2002)

Modeling the Hubble Space Telescope Ultraviolet and Optical Spectrum of Spot 1 on the Circumstellar Ring of SN 1987A. *Chun S. J. Pun, Eli Michael, Svetozar A. Zhekov, Richard McCray, Peter M. Garvach, Peter M. Challis, Robert P. Kirshner, E. Baron, David Branch, Roger A. Chevalier, Alexei V. Filippenko, Claes Fransson, Bruno Leibundgut, Peter Lundqvist, Nino Panagia, M. M. Phillips, Brian Schmidt, George Sonneborn, Nicholas B. Suntzeff, Lifan Wang, & J. Craig Wheeler.* 572, 906 (2002)

## Alphanumeric: SN 1998S

X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S. *David Pooley, Walter H. G. Lewin, Derek W. Fox, Jon M. Miller, Christina K. Lacey, Schuyler D. Van Dyk, Kurt W. Weiler, Richard A. Sramek, Alexei V. Filippenko, Douglas C. Leonard, Stefan Immler, Roger A. Chevalier, Andrew C. Fabian, Claes Fransson, & Ken'ichi Nomoto.* 572, 932 (2002)

## Alphanumeric: SN 1998bw

Detection of a Supernova Signature Associated with GRB 011121. *J. S. Bloom, S. R. Kulkarni, P. A. Price, D. E. Reichart, T. J. Galama, B. P. Schmidt, D. A. Frail, E. Berger, P. J. McCarthy, R. A. Chevalier, J. C. Wheeler, J. P. Halpern, D. W. Fox, S. G. Djorgovski, F. A. Harrison,*

R. Sari, T. S. Axelrod, R. A. Kimble, J. Holtzman, K. Hurley, F. Frontera, L. Piro, & E. Costa. 572, L45 (2002)

#### Alphanumeric: SN 1999em

X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S. David Pooley, Walter H. G. Lewin, Derek W. Fox, Jon M. Miller, Christina K. Lacey, Schuyler D. Van Dyk, Kurt W. Weiler, Richard A. Sramek, Alexei V. Filippenko, Douglas C. Leonard, Stefan Immler, Roger A. Chevalier, Andrew C. Fabian, Claes Fransson, & Ken'ichi Nomoto. 572, 932 (2002)

#### Alphanumeric: SN 2002ap

XMM-Newton Observation of the Spiral Galaxy M74 (NGC 628). Roberto Soria & Albert K. H. Kong. 572, L33 (2002)

On the Progenitor of the Type Ic Supernova 2002ap. S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen. 572, L147 (2002)

#### STARS: VARIABLES: CEPHEIDS

Arguments for a Hubble Constant near  $H_0 = 55$ . H. Arp. 571, 615 (2002)

#### STARS: VARIABLES: OTHER

An Infrared Ring Nebula around MSX5C G358.5391+00.1305: The True Nature of Suspected Planetary Nebula Wray 17-96 Determined via Direct Imaging and Spectroscopy. Michael P. Egan, J. Simon Clark, Donald R. Micuno, Sean J. Carey, Iain A. Steele, & Stephan D. Price. 572, 288 (2002)

Models of Planets and Brown Dwarfs in Mira Winds. Curtis Struck, Babak E. Cohanin, & Lee Anne Willson. 572, L83 (2002)

#### STARS: WHITE DWARFS

Study of Gamma-Ray Burst Binary Progenitors. Krzysztof Belczynski, Tomasz Bulik, & Bronislaw Rudak. 571, 394 (2002)

A Determination of the Local Density of White Dwarf Stars. J. B. Holberg, Terry D. Oswalt, & E. M. Sion. 571, 512 (2002)

The Extraordinary Cataclysmic Binary RU Pegasi: The Hottest White Dwarf in a Dwarf Nova? Edward M. Sion & Joel Urban. 572, 456 (2002)

Are There Unstable Planetary Systems around White Dwarfs? John H. Debes & Steinn Sigurdsson. 572, 556 (2002)

#### STARS: WINDS, OUTFLOWS

The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. J. P. Aufdenberg, P. H. Hauschildt, E. Baron, T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry. 570, 344 (2002)

Detection of X-Ray Emission from the Arches Cluster near the Galactic Center. F. Yusef-Zadeh, C. Law, M. Wardle, Q. D. Wang, A. Fruscione, C. C. Lang, & A. Cotera. 570, 665 (2002)

Damping of Low-Frequency Alfvén Waves in Fast Polar Coronal Winds from the Rotating Sun. Yu-Qing Lou. 571, L187 (2002)

Resonance Line Profile Calculations Based on Hydrodynamical Models of Cataclysmic Variable Winds. Daniel Proga, Timothy R. Kallman, Janet E. Drew, & Louise E. Hartley. 572, 382 (2002)

XMM-Newton Detection of Hard X-Ray Emission in the Nitrogen-Type Wolf-Rayet Star WR 110. Stephen L. Skinner, Svetozar A. Zhekov, Manuel Güdel, & Werner Schmutz. 572, 477 (2002)

Models of Planets and Brown Dwarfs in Mira Winds. Curtis Struck, Babak E. Cohanin, & Lee Anne Willson. 572, L83 (2002)

Radio Pulses through a Magnetized Relativistic Pair Plasma Flow. Yu-Qing Lou. 572, L91 (2002)

A Wall of Dust around a Proto-Mira? Albert A. Zijlstra & R. Weinberger. 572, 1006 (2002)

#### STARS: WOLF-RAYET

XMM-Newton Detection of Hard X-Ray Emission in the Nitrogen-Type Wolf-Rayet Star WR 110. Stephen L. Skinner, Svetozar A. Zhekov, Manuel Güdel, & Werner Schmutz. 572, 477 (2002)

Optical Spectroscopy of Metal-rich H II Regions and Circumstellar Hot Spots in M83 and NGC 3351. Fabio Bresolin & Robert C. Kennicutt, Jr. 572, 838 (2002)

On the Progenitor of the Type Ic Supernova 2002ap. S. J. Smartt, P. M. Vreeswijk, E. Ramirez-Ruiz, G. F. Gilmore, W. P. S. Meikle, A. M. P. Ferguson, & J. H. Knapen. 572, L147 (2002)

#### STELLAR DYNAMICS

The Promiscuous Nature of Stars in Clusters. Jarrod R. Hurley & Michael M. Shara. 570, 184 (2002)

Millisecond Pulsars as Probes of Mass Segregation in the Galactic Center. Julio Chanamé & Andrew Gould. 571, 320 (2002)

Star Clusters as Type Ia Supernova Factories. Michael M. Shara & Jarrod R. Hurley. 571, 830 (2002)

Dynamics of a Massive Black Hole at the Center of a Dense Stellar System. Pinaki Chatterjee, Lars Hernquist, & Abraham Loeb. 572, 371 (2002)

#### SUBMILLIMETER

Understanding the Nature of the Optically Faint Radio Sources and Their Connection to the Submillimeter Population. Scott C. Chapman, Geraint F. Lewis, Douglas Scott, Colin Borys, & Eric Richards. 570, 557 (2002)

Spatial Distribution of Dust Grains within H II Regions. Akio K. Inoue. 570, 688 (2002)

The Environment and Nature of the Class I Protostar Elias 29: Molecular Gas Observations and the Location of Ices. A. C. A. Boogert, M. R. Hogerheijde, C. Ceccarelli, A. G. G. M. Tielens, E. F. van Dishoeck, G. A. Blake, W. B. Latter, & F. Motte. 570, 708 (2002)

The Formation of Massive Stars. I. High-Resolution Millimeter and Radio Studies of High-Mass Protostellar Candidates. Sergio Molinari, Leonardo Testi, Luis F. Rodríguez, & Qizhou Zhang. 570, 758 (2002)

Magnetic Fields in Star-forming Molecular Clouds. IV. Polarimetry of the Filamentary NGC 2068 Cloud in Orion B. Brenda C. Matthews & Christine D. Wilson. 571, 356 (2002)

A Submillimeter Survey of Gravitationally Lensed Quasars. Richard Barvainis & Rob Ivison. 571, 712 (2002)

#### SUN: ABUNDANCES

Magnetic Topology of Impulsive and Gradual Solar Energetic Particle Events. Donald V. Reames. 571, L63 (2002)

#### SUN: ACTIVITY

The Physical Content of the Leading Orders of Principal Component Analysis of Spectral Profiles. A. Skumanich & A. López Ariste. 570, 379 (2002)

Particle Acceleration Scalings Based on Exact Analytic Models for Magnetic Reconnection. I. J. D. Craig & Yuri E. Litvinenko. 570, 387 (2002)

The Peak Flux Distribution of Solar Radio Bursts. Gelu M. Nita, Dale E. Gary, L. J. Lanzerotti, & D. J. Thomson. 570, 423 (2002)

A Nonthermal Collimated Ejection Observed with the Nobeyama Radioheliograph. H. Nakajima & T. Yokoyama. 570, L41 (2002)

Evolving Submerged Meridional Circulation Cells within the Upper Convection Zone Revealed by Ring-Diagram Analysis. Deborah A. Haber, Bradley W. Hindman, Juri Toomre, Richard S. Bogart, Rasmus M. Larsen, & Frank Hill. 570, 855 (2002)

Correlating Transition Region Explosive Events With Extreme-Ultraviolet Brightenings. Amy R. Winebarger, Adria C. Updike, & Katherine K. Reeves. 570, L105 (2002)

Large-Scale Solar Coronal Structures in Soft X-Rays and Their Relationship to the Magnetic Flux. E. E. Benevolenskaya, A. G. Kosovichev, J. R. Lemen, P. H. Scherrer, & G. L. Slater. 571, L181 (2002)

Magnetic Flaring in the Pre-Main-Sequence Sun and Implications for the Early Solar System. Eric D. Feigelson, Gordon P. Garmire, & Steven H. Pravdo. 572, 335 (2002)

Localizing Width and Energy of Solar Global  $p$ -Modes. R. Komm, R. Howe, & F. Hill. 572, 663 (2002)

Evidence of EIT and Moreton Waves in Numerical Simulations. P. F. Chen, S. T. Wu, K. Shibata, & C. Feng. 572, L99 (2002)

Evolution of Anomalous Cosmic-Ray Oxygen and Helium Energy Spectra during the Solar Cycle 22 Recovery Phase in the Outer Heliosphere. M. E. Hill, D. C. Hamilton, & S. M. Krimigis. 572, L169 (2002)

#### SUN: ATMOSPHERE

Energy Transformation Mechanism in the Solar Atmosphere Associated with Magnetofluid Coupling: Explosive and Eruptive Events. Shuichi Ohsaki, Nana L. Shatashvili, Zensho Yoshida, & Swadesh M. Mahajan. 570, 395 (2002)

#### SUN: ATMOSPHERIC MOTIONS

The Physical Content of the Leading Orders of Principal Component Analysis of Spectral Profiles. A. Skumanich & A. López Ariste. 570, 379 (2002)

Turbulent Time Correlations and Generation of Acoustic Waves by Stellar or Solar Turbulent Convection. Robert Rubinstein & Ye Zhou. 572, 674 (2002)

# SUN: CHROMOSPHERE

Energy Transformation Mechanism in the Solar Atmosphere Associated with Magnetofluid Coupling: Explosive and Eruptive Events. *Shuichi Ohsaki, Nana L. Shatashvili, Zensho Yoshida, & Swadesh M. Mahajan.* 570, 395 (2002)

Dynamic Hydrogen Ionization. *Mats Carlsson & R. F. Stein.* 572, 626 (2002)  
Simultaneous Observations of a Moreton Wave on 1997 November 3 in H $\alpha$  and Soft X-Rays. *N. Narukage, H. S. Hudson, T. Morimoto, S. Akiyama, R. Kitai, H. Kurokawa, & K. Shibata.* 572, L109 (2002)

# SUN: CORONA

Energy Transformation Mechanism in the Solar Atmosphere Associated with Magnetofluid Coupling: Explosive and Eruptive Events. *Shuichi Ohsaki, Nana L. Shatashvili, Zensho Yoshida, & Swadesh M. Mahajan.* 570, 395 (2002)

Tomography of the Solar Corona. I. Robust, Regularized, Positive Estimation of the Three-dimensional Electron Density Distribution from LASCO-C2 Polarized White-Light Images. *Richard A. Frazin & Paul Janzen.* 570, 408 (2002)

Correlating Transition Region Explosive Events With Extreme-Ultraviolet Brightenings. *Amy R. Winebarger, Adria C. Updike, & Katherine K. Reeves.* 570, L105 (2002)

Numerical Study of Three-dimensional Magnetohydrodynamic Instability in the Solar Coronal Magnetic Arcades. *K. Kusano.* 571, 532 (2002)

A Classical Model for the Damped, Magnetic Dipole Oscillator. *Roberto Casini & Haosheng Lin.* 571, 540 (2002)

Magnetic Topology of Impulsive and Gradual Solar Energetic Particle Events. *Donald V. Reames.* 571, L63 (2002)

Heating in Coronal Funnels by Ion Cyclotron Waves. *Xing Li.* 571, L67 (2002)

Quiescent Solar Prominences and Magnetic-Energy Storage. *B. Fong, B. C. Low, & Y. Fan.* 571, 987 (2002)

Temperature and Density Measurements in a Quiet Coronal Streamer. *Harry P. Warren & Andrew D. Marshall.* 571, 999 (2002)

Empirical Densities, Kinetic Temperatures, and Outflow Velocities in the Equatorial Streamer Belt at Solar Minimum. *L. Strachan, R. Suleiman, A. V. Panasyuk, D. A. Biesecker, & J. L. Kohl.* 571, 1008 (2002)

Large-Scale Solar Coronal Structures in Soft X-Rays and Their Relationship to the Magnetic Flux. *E. E. Benevolenskaya, A. G. Kosovichev, J. R. Lemen, P. H. Scherrer, & G. L. Slater.* 571, L181 (2002)

Damping of Low-Frequency Alfvén Waves in Fast Polar Coronal Winds from the Rotating Sun. *Yu-Qing Lou.* 571, L187 (2002)

The Large-Scale Coronal Field Structure and Source Region Features for a Halo Coronal Mass Ejection. *Tongjiang Wang, Yihua Yan, Jialong Wang, H. Kurokawa, & K. Shibata.* 572, 580 (2002)

Electron Transport during the 1999 August 20 Flare Inferred from Microwave and Hard X-Ray Observations. *Jeongwoo Lee, Dale E. Gary, Jiong Qiu, & Peter T. Gallagher.* 572, 609 (2002)

Evidence of EIT and Moreton Waves in Numerical Simulations. *P. F. Chen, S. T. Wu, K. Shibata, & C. Feng.* 572, L99 (2002)

Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopal-swamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Rosenvinge.* 572, L103 (2002)

Simultaneous Observations of a Moreton Wave on 1997 November 3 in H $\alpha$  and Soft X-Rays. *N. Narukage, H. S. Hudson, T. Morimoto, S. Akiyama, R. Kitai, H. Kurokawa, & K. Shibata.* 572, L109 (2002)

Bulk Heating and Slender Magnetic Loops in the Solar Corona. *Boris Vilhelm Gudiksen & Åke Nordlund.* 572, L113 (2002)

Nanoflare Statistics from First Principles: Fractal Geometry and Temperature Synthesis. *Markus J. Aschwanden & Clare E. Parnell.* 572, 1048 (2002)

# SUN: CORONAL MASS EJECTIONS (CMES)

Energy Transformation Mechanism in the Solar Atmosphere Associated with Magnetofluid Coupling: Explosive and Eruptive Events. *Shuichi Ohsaki, Nana L. Shatashvili, Zensho Yoshida, & Swadesh M. Mahajan.* 570, 395 (2002)

Quiescent Solar Prominences and Magnetic-Energy Storage. *B. Fong, B. C. Low, & Y. Fan.* 571, 987 (2002)

Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopal-swamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Rosenvinge.* 572, L103 (2002)

# SUN: FACULAE, PLAGES

Infrared Photometry of Solar Photospheric Structures. II. Center-to-Limb Variation of Active Regions. *M. Sánchez Cuberes, M. Vázquez, J. A. Bonet, & M. Sobotka.* 570, 886 (2002)

# SUN: FLARES

Particle Acceleration Scalings Based on Exact Analytic Models for Magnetic Reconnection. *I. J. D. Craig & Yuri E. Livinenko.* 570, 387 (2002)

Energy Transformation Mechanism in the Solar Atmosphere Associated with Magnetofluid Coupling: Explosive and Eruptive Events. *Shuichi Ohsaki, Nana L. Shatashvili, Zensho Yoshida, & Swadesh M. Mahajan.* 570, 395 (2002)

A Nonthermal Collimated Ejection Observed with the Nobeyama Radioheliograph. *H. Nakajima & T. Yokoyama.* 570, L41 (2002)

Numerical Study of Three-dimensional Magnetohydrodynamic Instability in the Solar Coronal Magnetic Arcades. *K. Kusano.* 571, 532 (2002)

The Large-Scale Coronal Field Structure and Source Region Features for a Halo Coronal Mass Ejection. *Tongjiang Wang, Yihua Yan, Jialong Wang, H. Kurokawa, & K. Shibata.* 572, 580 (2002)

Emergence and Drastic Breakdown of a Twisted Flux Rope to Trigger Strong Solar Flares in NOAA Active Region 9026. *Hiroki Kurokawa, Tongjiang Wang, & Takako T. Ishii.* 572, 598 (2002)

Electron Transport during the 1999 August 20 Flare Inferred from Microwave and Hard X-Ray Observations. *Jeongwoo Lee, Dale E. Gary, Jiong Qiu, & Peter T. Gallagher.* 572, 609 (2002)

Simultaneous Observations of a Moreton Wave on 1997 November 3 in H $\alpha$  and Soft X-Rays. *N. Narukage, H. S. Hudson, T. Morimoto, S. Akiyama, R. Kitai, H. Kurokawa, & K. Shibata.* 572, L109 (2002)

Nanoflare Statistics from First Principles: Fractal Geometry and Temperature Synthesis. *Markus J. Aschwanden & Clare E. Parnell.* 572, 1048 (2002)

Rapid Changes in the Longitudinal Magnetic Field Related to the 2001 April 2 X20 Flare. *Thomas J. Spirock, Vasily B. Yurchyshyn, & Haimin Wang.* 572, 1072 (2002)

# SUN: GRANULATION

Infrared Photometry of Solar Photospheric Structures. II. Center-to-Limb Variation of Active Regions. *M. Sánchez Cuberes, M. Vázquez, J. A. Bonet, & M. Sobotka.* 570, 886 (2002)

# SUN: HELIOSEISMOLOGY

Evolving Submerged Meridional Circulation Cells within the Upper Convection Zone Revealed by Ring-Diagram Analysis. *Deborah A. Haber, Bradley W. Hindman, Juri Toomre, Richard S. Bogart, Rasmus M. Larsen, & Frank Hill.* 570, 855 (2002)

Time-Distance Helioseismology: The Forward Problem for Random Distributed Sources. *L. Gizon & A. C. Birch.* 571, 966 (2002)

Localizing Width and Energy of Solar Global *p*-Modes. *R. Komm, R. Howe, & F. Hill.* 572, 663 (2002)

# SUN: INTERIOR

Penetration and Overshooting in Turbulent Compressible Convection. *Nicholas H. Brummell, Thomas L. Clune, & Juri Toomre.* 570, 825 (2002)

Evolving Submerged Meridional Circulation Cells within the Upper Convection Zone Revealed by Ring-Diagram Analysis. *Deborah A. Haber, Bradley W. Hindman, Juri Toomre, Richard S. Bogart, Rasmus M. Larsen, & Frank Hill.* 570, 855 (2002)

Turbulent Convection under the Influence of Rotation: Sustaining a Strong Differential Rotation. *Allan Sacha Brun & Juri Toomre.* 570, 865 (2002)

Time-Distance Helioseismology: The Forward Problem for Random Distributed Sources. *L. Gizon & A. C. Birch.* 571, 966 (2002)

# SUN: MAGNETIC FIELDS

The Physical Content of the Leading Orders of Principal Component Analysis of Spectral Profiles. *A. Skumanich & A. López Ariste.* 570, 379 (2002)

Particle Acceleration Scalings Based on Exact Analytic Models for Magnetic Reconnection. *I. J. D. Craig & Yuri E. Livinenko.* 570, 387 (2002)

Energy Transformation Mechanism in the Solar Atmosphere Associated with Magnetofluid Coupling: Explosive and Eruptive Events. *Shuichi Ohsaki, Nana L. Shatashvili, Zensho Yoshida, & Swadesh M. Mahajan.* 570, 395 (2002)

Numerical Study of Three-dimensional Magnetohydrodynamic Instability in the Solar Coronal Magnetic Arcades. *K. Kusano.* 571, 532 (2002)

Large-Scale Solar Coronal Structures in Soft X-Rays and Their Relationship to the Magnetic Flux. *E. E. Benevolenskaya, A. G. Kosovichev, J. R. Lemen, P. H. Scherrer, & G. L. Slater.* 571, L181 (2002)

The Large-Scale Coronal Field Structure and Source Region Features for a Halo Coronal Mass Ejection. *Tongjiang Wang, Yihua Yan, Jialong Wang, H. Kurokawa, & K. Shibata.* 572, 580 (2002)

Emergence and Drastic Breakdown of a Twisted Flux Rope to Trigger Strong Solar Flares in NOAA Active Region 9026. *Hiroki Kurokawa, Tongjiang Wang, & Takako T. Ishii.* 572, 598 (2002)



Localizing Width and Energy of Solar Global  $p$ -Modes. *R. Komm, R. Howe, & F. Hill.* 572, 663 (2002)

Evidence of EIT and Moreton Waves in Numerical Simulations. *P. F. Chen, S. T. Wu, K. Shibata, & C. Feng.* 572, L99 (2002)

Simultaneous Observations of a Moreton Wave on 1997 November 3 in H $\alpha$  and Soft X-Rays. *N. Narukage, H. S. Hudson, T. Morimoto, S. Akiyama, R. Kitai, H. Kurokawa, & K. Shibata.* 572, L109 (2002)

Bulk Heating and Slender Magnetic Loops in the Solar Corona. *Boris Vilhelm Gudiksen & Åke Nordlund.* 572, L113 (2002)

Rapid Changes in the Longitudinal Magnetic Field Related to the 2001 April 2 X20 Flare. *Thomas J. Spirook, Vasyli B. Yurchyshyn, & Haimin Wang.* 572, 1072 (2002)

#### SUN: OSCILLATIONS

Time-Distance Helioseismology: The Forward Problem for Random Distributed Sources. *L. Gizon & A. C. Birch.* 571, 966 (2002)

Localizing Width and Energy of Solar Global  $p$ -Modes. *R. Komm, R. Howe, & F. Hill.* 572, 663 (2002)

#### SUN: PARTICLE EMISSION

Magnetic Topology of Impulsive and Gradual Solar Energetic Particle Events. *Donald V. Reames.* 571, L63 (2002)

The Large-Scale Coronal Field Structure and Source Region Features for a Halo Coronal Mass Ejection. *Tongjiang Wang, Yihua Yan, Jialong Wang, H. Kurokawa, & K. Shibata.* 572, 580 (2002)

Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopal-swamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Roseninge.* 572, L103 (2002)

#### SUN: PHOTOSPHERE

Infrared Photometry of Solar Photospheric Structures. II. Center-to-Limb Variation of Active Regions. *M. Sánchez-Cuberes, M. Vázquez, J. A. Bonet, & M. Sobotka.* 570, 886 (2002)

#### SUN: PROMINENCES

Quiescent Solar Prominences and Magnetic-Energy Storage. *B. Fong, B. C. Low, & Y. Fan.* 571, 987 (2002)

#### SUN: RADIO RADIATION

The Peak Flux Distribution of Solar Radio Bursts. *Gelu M. Nita, Dale E. Gary, L. J. Lanzerotti, & D. J. Thomson.* 570, 423 (2002)

A Nonthermal Collimated Ejection Observed with the Nobeyama Radioheliograph. *H. Nakajima & T. Yokoyama.* 570, L41 (2002)

Electron Transport during the 1999 August 20 Flare Inferred from Microwave and Hard X-Ray Observations. *Jeongwoo Lee, Dale E. Gary, Jiong Qiu, & Peter T. Gallagher.* 572, 609 (2002)

Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopal-swamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Roseninge.* 572, L103 (2002)

#### SUN: ROTATION

Evolving Submerged Meridional Circulation Cells within the Upper Convection Zone Revealed by Ring-Diagram Analysis. *Deborah A. Haber, Bradley W. Hindman, Juri Toomre, Richard S. Bogart, Rasmus M. Larsen, & Frank Hill.* 570, 855 (2002)

Turbulent Convection under the Influence of Rotation: Sustaining a Strong Differential Rotation. *Allan Sacha Brun & Juri Toomre.* 570, 865 (2002)

#### SUN: SOLAR-TERRESTRIAL RELATIONS

Interacting Coronal Mass Ejections and Solar Energetic Particles. *N. Gopal-swamy, S. Yashiro, G. Michalek, M. L. Kaiser, R. A. Howard, D. V. Reames, R. Leske, & T. von Roseninge.* 572, L103 (2002)

#### SUN: SOLAR WIND

Heating in Coronal Funnel by Ion Cyclotron Waves. *Xing Li.* 571, L67 (2002)

Empirical Densities, Kinetic Temperatures, and Outflow Velocities in the Equatorial Streamer Belt at Solar Minimum. *L. Strachan, R. Suleiman, A. V. Panasyuk, D. A. Biesecker, & J. L. Kohl.* 571, 1008 (2002)

Damping of Low-Frequency Alfvén Waves in Fast Polar Coronal Winds from the Rotating Sun. *Yu-Qing Lou.* 571, L187 (2002)

#### SUN: SUNSPOTS

The Physical Content of the Leading Orders of Principal Component Analysis of Spectral Profiles. *A. Skumanich & A. López-Ariste.* 570, 379 (2002)

Emergence and Drastic Breakdown of a Twisted Flux Rope to Trigger Strong Solar Flares in NOAA Active Region 9026. *Hiroki Kurokawa, Tongjiang Wang, & Takako T. Ishii.* 572, 598 (2002)

#### SUN: TRANSITION REGION

Heating in Coronal Funnel by Ion Cyclotron Waves. *Xing Li.* 571, L67 (2002)

Energy Balance in the Solar Transition Region. IV. Hydrogen and Helium Mass Flows with Diffusion. *J. M. Fontenla, E. H. Avrett, & R. Loeser.* 572, 636 (2002)

Bulk Heating and Slender Magnetic Loops in the Solar Corona. *Boris Vilhelm Gudiksen & Åke Nordlund.* 572, L113 (2002)

#### SUN: UV RADIATION

Empirical Densities, Kinetic Temperatures, and Outflow Velocities in the Equatorial Streamer Belt at Solar Minimum. *L. Strachan, R. Suleiman, A. V. Panasyuk, D. A. Biesecker, & J. L. Kohl.* 571, 1008 (2002)

Large-Scale Solar Coronal Structures in Soft X-Rays and Their Relationship to the Magnetic Flux. *E. E. Benevolenskaya, A. G. Kosovichev, J. R. Lemen, P. H. Scherrer, & G. L. Slater.* 571, L181 (2002)

The Large-Scale Coronal Field Structure and Source Region Features for a Halo Coronal Mass Ejection. *Tongjiang Wang, Yihua Yan, Jialong Wang, H. Kurokawa, & K. Shibata.* 572, 580 (2002)

Nanoflare Statistics from First Principles: Fractal Geometry and Temperature Synthesis. *Markus J. Aschwanden & Clare E. Parnell.* 572, 1048 (2002)

#### SUN: X-RAYS, GAMMA RAYS

A Nonthermal Collimated Ejection Observed with the Nobeyama Radioheliograph. *H. Nakajima & T. Yokoyama.* 570, L41 (2002)

Large-Scale Solar Coronal Structures in Soft X-Rays and Their Relationship to the Magnetic Flux. *E. E. Benevolenskaya, A. G. Kosovichev, J. R. Lemen, P. H. Scherrer, & G. L. Slater.* 571, L181 (2002)

The Large-Scale Coronal Field Structure and Source Region Features for a Halo Coronal Mass Ejection. *Tongjiang Wang, Yihua Yan, Jialong Wang, H. Kurokawa, & K. Shibata.* 572, 580 (2002)

Electron Transport during the 1999 August 20 Flare Inferred from Microwave and Hard X-Ray Observations. *Jeongwoo Lee, Dale E. Gary, Jiong Qiu, & Peter T. Gallagher.* 572, 609 (2002)

Nanoflare Statistics from First Principles: Fractal Geometry and Temperature Synthesis. *Markus J. Aschwanden & Clare E. Parnell.* 572, 1048 (2002)

#### SURVEYS

The Las Campanas Infrared Survey. III. The  $H$ -Band Imaging Survey and the Near-Infrared and Optical Photometric Catalogs. *Hsiao-Wen Chen, P. J. McCarthy, R. O. Marzke, J. Wilson, R. G. Carlberg, A. E. Firth, S. E. Persson, C. N. Sabbey, J. R. Lewis, R. G. McMahon, O. Lahav, R. S. Ellis, P. Martini, R. G. Abraham, A. Oemler, D. C. Murphy, R. S. Somerville, M. G. Beckett, & C. D. Mackay.* 570, 54 (2002)

#### TECHNIQUES: HIGH ANGULAR RESOLUTION

Crossing the Brown Dwarf Desert Using Adaptive Optics: A Very Close L Dwarf Companion to the Nearby Solar Analog HR 7672. *Michael C. Liu, Debra A. Fischer, James R. Graham, James P. Lloyd, Geoff W. Marcy, & R. Paul Butler.* 571, 519 (2002)

Discovery of an Edge-On Disk in the MBM 12 Young Association. *Ray Jayawardhana, K. L. Luhman, Paola D'Alessio, & John R. Stauffer.* 571, L51 (2002)

#### TECHNIQUES: INTERFEROMETRIC

The Spectral Energy Distribution and Mass-Loss Rate of the A-Type Supergiant Deneb. *J. P. Aufdenberg, P. H. Hauschildt, E. Baron, T. E. Nordgren, I. D. Howarth, A. W. Burnley, K. D. Gordon, & J. A. Stansberry.* 570, 344 (2002)

Time-dependent Asymmetries in the Atmosphere of the Mira Variable R Trianguli through Infrared Interferometry. *R. R. Thompson, M. J. Creech-Eakman, & R. L. Akeson.* 570, 373 (2002)

Shape Reconstruction and Weak Lensing Measurement with Interferometers: A Shapelet Approach. *Tzu-Ching Chang & Alexandre Refregier.* 570, 447 (2002)

A Coronagraph with a Band-limited Mask for Finding Terrestrial Planets. *Marc J. Kuchner & Wesley A. Traub.* 570, 900 (2002)

Very Long Baseline Array Measurement of Nine Pulsar Parallaxes. *Walter F. Brisken, John M. Benson, W. M. Goss, & S. E. Thorsett.* 571, 906 (2002)

Possible Corotation of the Milliarcsecond Radio Structure of the Close Binary HR 1099. *R. R. Ransom, N. Bartel, M. F. Bietenholz, D. E. Lebach, M. I. Ratner, I. I. Shapiro, & J.-F. Lestrade.* 572, 487 (2002)

#### TECHNIQUES: PHOTOMETRIC

The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. I. Results. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore.* 571, 56 (2002)

ISOCAM Observations of Galactic Globular Clusters: Mass Loss along the Red Giant Branch. *Livia Origlia, Francesco R. Ferraro, Flavio Fusi Pecci, & Robert T. Rood.* 571, 458 (2002)

#### TECHNIQUES: RADIAL VELOCITIES

Fixed Delay Interferometry for Doppler Extrasolar Planet Detection. *Jian Ge.* 571, L165 (2002)

#### TECHNIQUES: SPECTROSCOPIC

The First Detections of the Extragalactic Background Light at 3000, 5500, and 8000 Å. II. Measurement of Foreground Zodiacal Light. *Rebecca A. Bernstein, Wendy L. Freedman, & Barry F. Madore.* 571, 85 (2002)

The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra.* 571, 256 (2002)

Empirical Densities, Kinetic Temperatures, and Outflow Velocities in the Equatorial Streamer Belt at Solar Minimum. *L. Strachan, R. Suleiman, A. V. Panasyuk, D. A. Biesecker, & J. L. Kohl.* 571, 1008 (2002)

Variability of the X-Ray P Cygni Line Profiles from Circinus X-1 Near Zero Phase. *N. S. Schultz & W. N. Brandt.* 572, 971 (2002)

#### TURBULENCE

The Effect of the Hall Term on the Nonlinear Evolution of the Magnetorotational Instability. I. Local Axisymmetric Simulations. *Takayoshi Sano & James M. Stone.* 570, 314 (2002)

Physical versus Observational Properties of Clouds in Turbulent Molecular Cloud Models. *Javier Ballesteros-Parades & Mordecai-Mark Mac Low.* 570, 734 (2002)

Penetration and Overshooting in Turbulent Compressible Convection. *Nicholas H. Brummell, Thomas L. Clune, & Juri Toomre.* 570, 825 (2002)

Turbulent Convection under the Influence of Rotation: Sustaining a Strong Differential Rotation. *Allan Sacha Brun & Juri Toomre.* 570, 865 (2002)

Velocity Structure of the Interstellar Medium as Seen by the Spectral Correlation Function. *Javier Ballesteros-Parades, Enrique Vázquez-Semadeni, & Alyssa A. Goodman.* 571, 334 (2002)

Three-dimensional Magnetohydrodynamic Simulations of an Accretion Disk with Star-Disk Boundary Layer. *Adriane Steinacker & John C. B. Papaloizou.* 571, 413 (2002)

Magnetized Turbulent Dynamos in Protogalaxies. *Leonid Malyszhkin & Russell M. Kulsrud.* 571, 619 (2002)

On the Possible Reason for Nondetection of TeV Protons in Supernova Remnants. *M. A. Malkov, P. H. Diamond, & T. W. Jones.* 571, 856 (2002)

Turbulent Time Correlations and Generation of Acoustic Waves by Stellar or Solar Turbulent Convection. *Robert Rubinstein & Ye Zhou.* 572, 674 (2002)

#### ULTRAVIOLET: GALAXIES

The Nuclei of Radio Galaxies in the Ultraviolet: The Signature of Different Emission Processes. *Marco Chiaberge, F. Duccio Macchetto, William B. Sparks, Alessandro Capetti, Mark G. Allen, & André R. Martel.* 571, 247 (2002)

Determining Central Black Hole Masses in Distant Active Galaxies. *M. Vestergaard.* 571, 733 (2002)

The Mass of the Central Black Hole in the Seyfert Galaxy NGC 3783. *Christopher A. Onken & Bradley M. Peterson.* 572, 746 (2002)

#### ULTRAVIOLET: GENERAL

The Local Interstellar Ultraviolet Radiation Field. *Richard Conn Henry.* 570, 697 (2002)

#### ULTRAVIOLET: ISM

Hydrogen Column Density Evaluations toward Capella: Consequences on the Interstellar Deuterium Abundance. *A. Vidal-Madjar & R. Ferlet.* 571, L169 (2002)

Pathways to Glycine and Other Amino Acids in Ultraviolet-Irradiated Astrophysical Ices Determined Via Quantum Chemical Modeling. *David A. Woon.* 571, L177 (2002)

Far-Ultraviolet Spectroscopic Explorer Observations of Degree-Scale Variations in Galactic Halo O VI. *J. Christopher Howk, Blair D. Savage, Kenneth R. Sembach, & Charles G. Hoopes.* 572, 264 (2002)

High-Resolution Measurements of Intersystem Bands of Carbon Monoxide toward X Persei. *Yaron Sheffer, S. R. Federman, & David L. Lambert.* 572, L95 (2002)

#### ULTRAVIOLET: SOLAR SYSTEM

The Abundance of Atomic Sulfur in the Atmosphere of Io. *Lori M. Feaga, Melissa A. McGrath, & Paul D. Feldman.* 570, 439 (2002)

#### ULTRAVIOLET: STARS

Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 570, 799 (2002)

Ultraviolet C I Lines in the HgMn Star  $\chi$  Lupi. *Charles R. Proffitt.* 571, 955 (2002)

The Far-Ultraviolet Spectrum of TW Hydrae. I. Observations of H<sub>2</sub> Fluorescence. *Gregory J. Herczeg, Jeffrey L. Linsky, Jeff A. Valenti, Christopher M. Johns-Krull, & Brian E. Wood.* 572, 310 (2002)

#### WAVES

Time-Distance Helioseismology: The Forward Problem for Random Distributed Sources. *L. Gizon & A. C. Birch.* 571, 966 (2002)

Damping of Low-Frequency Alfvén Waves in Fast Polar Coronal Winds from the Rotating Sun. *Yu-Qing Lou.* 571, L187 (2002)

Dynamic Hydrogen Ionization. *Mats Carlsson & R. F. Stein.* 572, 626 (2002)

Turbulent Time Correlations and Generation of Acoustic Waves by Stellar or Solar Turbulent Convection. *Robert Rubinstein & Ye Zhou.* 572, 674 (2002)

Radio Pulses through a Magnetized Relativistic Pair Plasma Flow. *Yu-Qing Lou.* 572, L91 (2002)

Evidence of EIT and Moreton Waves in Numerical Simulations. *P. F. Chen, S. T. Wu, K. Shibata, & C. Feng.* 572, L99 (2002)

#### X-RAYS: BINARIES

The X-Ray Spectra of Black Hole X-Ray Novae in Quiescence as Measured by Chandra. *Albert K. H. Kong, Jeffrey E. McClintock, Michael R. Garcia, Stephen S. Murray, & Didier Barret.* 570, 277 (2002)

A Decade in the Life of EXO 2030+375: A Multiwavelength Study of an Accreting X-Ray Pulsar. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, Silas Laycock, & J. Fabregat.* 570, 287 (2002)

X-Ray Binaries and Globular Clusters in Elliptical Galaxies. *Raymond E. White III, Craig L. Sarazin, & Shrinivas R. Kulkarni.* 571, L23 (2002)

Transient X-Ray Binaries in Elliptical Galaxies. *Anthony L. Piro & Lars Bildsten.* 571, L103 (2002)

XMM-Newton Observation of the Spiral Galaxy M74 (NGC 628). *Roberto Soria & Albert K. H. Kong.* 572, L33 (2002)

#### X-RAYS: BURSTS

Three Type I X-Ray Bursts from Cygnus X-2: Application of Analytical Models for Neutron Star Mass and Radius Determination. *Lev Titarchuk & Nikolai Shaposhnikov.* 570, L25 (2002)

#### X-RAYS: DIFFUSE BACKGROUND

The Brera Multiscale Wavelet Detection Algorithm Applied to the Chandra Deep Field–South: Deeper and Deeper. *A. Moretti, D. Lazzati, S. Campana, & G. Tagliaferri.* 570, 502 (2002)

#### X-RAYS: GALAXIES

Untangling the X-Ray Emission from the Sa Galaxy NGC 1291 with Chandra. *Jimmy A. Irwin, Craig L. Sarazin, & Joel N. Bregman.* 570, 152 (2002)

Inner-Shell 1s–2p Soft X-Ray Absorption Lines. *Ehud Behar & Hagai Netzer.* 570, 165 (2002)

Chandra Detection of Highest Redshift ( $z \sim 6$ ) Quasars in X-Rays. *Smita Mathur, Belinda J. Wilkes, & Himel Ghosh.* 570, L5 (2002)

Chandra Discovery of a 300 Kiloparsec X-Ray Jet in the Gigahertz-peaked Spectrum Quasar PKS 1127–145. *Aneta Siemiginowska, Jill Bechtold, Thomas L. Aldcroft, Martin Elvis, D. E. Harris, & Adam Dobrzycki.* 570, 543 (2002)

Bright X-Ray Sources in M31 Globular Clusters. *R. Di Stefano, A. K. H. Kong, M. R. Garcia, P. Barmby, J. Greiner, S. S. Murray, & F. A. Primini.* 570, 618 (2002)

A Survey of Extended Radio Jets in Active Galactic Nuclei with Chandra and the Hubble Space Telescope: First Results. *Rita M. Sambruna, L. Maraschi, F. Tavecchio, C. Megan Urry, C. C. Cheung, G. Chartas, R. Scarpa, & Jessica K. Gambill.* 571, 206 (2002)

A Classic Type 2 Quasar. *Colin Norman, Guenther Hasinger, Riccardo Giacconi, Roberto Gilli, Lisa Kewley, Mario Nonino, Piero Rosati, Gyula Szokoly, Paolo Tozzi, Junxian Wang, Wei Zheng, Andrew Zirm, Jacqueline Bergeron, Roberto Gilmozzi, Norman Grogan, Anton Koekemoer, & Ethan Schreier.* 571, 218 (2002)

Ubiquitous Variability of X-Ray-absorbing Column Densities in Seyfert 2 Galaxies. *G. Risaliti, M. Elvis, & F. Nicastro.* 571, 234 (2002)

The Density and Location of the X-Ray-absorbing Gas in NGC 3516. *Hagai Netzer, Doron Chelouche, I. M. George, T. J. Turner, D. M. Crenshaw, S. B. Kraemer, & K. Nandra.* 571, 256 (2002)

The Detection of Circumnuclear X-Ray Emission from the Seyfert Galaxy NGC 3516. *I. M. George, T. J. Turner, H. Netzer, S. B. Kraemer, J. Ruiz,*

- D. Chelouche, D. M. Crenshaw, T. Yaqoob, K. Nandra, & R. F. Mushotzky.* 571, 265 (2002)
- The Effect of Mixing on Metallicity Gradients in the Intracluster Medium. *M. Brüggen.* 571, L13 (2002)
- On the X-Ray Source Luminosity Distributions in the Bulge and Disk of M31: First Results from the XMM-Newton Survey. *Sergey P. Trudolyubov, Konstantin N. Borozdin, William C. Priedhorsky, Keith O. Mason, & France A. Cordova.* 571, L17 (2002)
- X-Ray Binaries and Globular Clusters in Elliptical Galaxies. *Raymond E. White III, Craig L. Sarazin, & Shrinivas R. Kulkarni.* 571, L23 (2002)
- Observation of X-Ray Variability in the BL Lacertae Object IES 1959+65. *Berrie Giebels, Elliott D. Bloom, Warren Focke, Gary Godfrey, Greg Madejski, Kaice T. Reilly, Pablo M. Saz Parkinson, Ganya Shabad, Reba M. Bandyopadhyay, Gilbert G. Fritz, Paul Hertz, Michael P. Kowalski, Michael N. Lovellette, Paul S. Ray, Michael T. Wolff, Kent S. Wood, Daryl J. Yentis, & Jeffrey D. Scargle.* 571, 763 (2002)
- The HELIAS2 XMM Survey. II. Multiwavelength Observations of P3: An X-Ray-bright, Optically Inactive Galaxy. *A. Comastri, M. Mignoli, P. Cilieggi, P. Severgnini, R. Maiolino, M. Brusa, F. Fiore, A. Baldi, S. Molendi, R. Morganti, C. Vignali, F. La Franca, G. Matt, & G. C. Perola.* 571, 771 (2002)
- ROSAT X-Ray Observations of the Dwarf Galaxy Holmberg II. *Jürgen Kerp, Fabian Walter, & Elias Brinks.* 571, 809 (2002)
- Chandra Observations of the Lensing Cluster EMSS 1358+6245: Implications for Self-interacting Dark Matter. *J. S. Arabadjis, M. W. Bautz, & G. P. Garmire.* 572, 66 (2002)
- An X-Ray Reprocessing Model of Disk Thermal Emission in Type I Seyfert Galaxies. *James Chiang.* 572, 79 (2002)
- Abundance Gradients and the Role of Supernovae in M87. *Fabio Gastaldello & Silvano Molendo.* 572, 160 (2002)
- XMM-Newton Observation of the Spiral Galaxy M74 (NGC 628). *Roberto Soria & Albert K. H. Kong.* 572, L33 (2002)
- Four Years of Monitoring Blazar PKS 2155-304 with BeppoSAX: Probing the Dynamics of the Jet. *Y. H. Zhang, A. Treves, A. Celotti, L. Chiappetti, G. Fossati, G. Ghisellini, L. Maraschi, E. Pian, G. Tagliaferri, & F. Tavecchio.* 572, 762 (2002)
- A Simple Model for a Magnetic Reconnection-heated Corona. *B. F. Liu, S. Mineshige, & K. Shibata.* 572, L173 (2002)
- X-RAYS: GALAXIES: CLUSTERS**
- Constraints in Cosmological Parameter Space from the Sunyaev-Zeldovich Effect and Thermal Bremsstrahlung. *S. M. Molnar, M. Birkinshaw, & R. F. Mushotzky.* 570, 1 (2002)
- Optimal Chandra and XMM-Newton Bandpasses for Detecting Low-Temperature Groups and Clusters of Galaxies. *Caleb Scharf.* 572, 157 (2002)
- Emission of Positron Annihilation Line Radiation by Clusters of Galaxies. *Steven R. Furlanetto & Abraham Loeb.* 572, 796 (2002)
- X-RAYS: GENERAL**
- The Brera Multiscale Wavelet Detection Algorithm Applied to the Chandra Deep Field-South: Deeper and Deeper. *A. Moretti, D. Lazzati, S. Campana, & G. Tagliaferri.* 570, 502 (2002)
- The Shape of the Relativistic Iron K $\alpha$  Line from MCG -6-30-15 Measured with the Chandra High Energy Transmission Grating Spectrometer and the Rossi X-Ray Timing Explorer. *Julia C. Lee, Kazushi Iwasawa, John C. Houck, Andrew C. Fabian, Herman L. Marshall, & Claude R. Canizares.* 570, L47 (2002)
- New Constraints on Neutron Star Cooling from Chandra Observations of 3C 58. *Patrick O. Slane, David J. Helfand, & Stephen S. Murray.* 571, L45 (2002)
- Chandra Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens? *Paul J. Green, Chris Kochanek, Aneta Siemiginowska, Dong-Woo Kim, Maxim Markevitch, John Silverman, Anil Dosaj, Buell T. Jannuzi, & Chris Smith.* 571, 721 (2002)
- A Chandra Search for X-Ray Jets in  $z \sim 6$  Quasars. *D. A. Schwartz.* 571, L71 (2002)
- Discovery of Soft X-Ray Emission from Io, Europa, and the Io Plasma Torus. *Ronald F. Elsner, G. Randall Gladstone, J. Hunter Waite, Frank J. Cray, Robert R. Howell, Robert E. Johnson, Peter G. Ford, Albert E. Metzger, Kevin C. Hurley, Eric D. Feigelson, Gordon P. Garmire, Anil Bhardwaj, Denis C. Grodent, Tariq Majeed, Allyn F. Tennant, & Martin C. Weisskopf.* 572, 1077 (2002)
- X-RAYS: INDIVIDUAL**
- Alphanumeric: EXO 2030+75**
- A Decade in the Life of EXO 2030+375: A Multiwavelength Study of an Accreting X-Ray Pulsar. *Colleen A. Wilson, Mark H. Finger, M. J. Coe, Silas Laycock, & J. Fabregat.* 570, 287 (2002)
- Alphanumeric: GRS 1915+105**
- Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105. *Y. Ueda, K. Yamaoka, C. Sánchez-Fernández, V. Dhawan, S. Chaty, J. E. Grove, M. McCollough, A. J. Castro-Tirado, F. Mirabel, K. Kohno, M. Feroqi, P. Casella, S. A. Trushkin, H. Castaneda, J. Rodríguez, P. Durouchoux, K. Ebisawa, T. Kotani, J. Swank, & H. Inoue.* 571, 918 (2002)
- Alphanumeric: MCG -6-30-15**
- The Shape of the Relativistic Iron K $\alpha$  Line from MCG -6-30-15 Measured with the Chandra High Energy Transmission Grating Spectrometer and the Rossi X-Ray Timing Explorer. *Julia C. Lee, Kazushi Iwasawa, John C. Houck, Andrew C. Fabian, Herman L. Marshall, & Claude R. Canizares.* 570, L47 (2002)
- Alphanumeric: Q2345+007**
- Chandra Observations of the QSO Pair Q2345+007: Binary or Massive Dark Lens? *Paul J. Green, Chris Kochanek, Aneta Siemiginowska, Dong-Woo Kim, Maxim Markevitch, John Silverman, Anil Dosaj, Buell T. Jannuzi, & Chris Smith.* 571, 721 (2002)
- Alphanumeric: SN 1998S**
- X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S. *David Pooley, Walter H. G. Lewin, Derek W. Fox, Jon M. Miller, Christina K. Lacey, Schuyler D. Van Dyk, Kurt W. Weiler, Richard A. Sramek, Alexei V. Filippenko, Douglas C. Leonard, Stefan Immler, Roger A. Chevalier, Andrew C. Fabian, Claes Fransson, & Ken'ichi Nomoto.* 572, 932 (2002)
- Alphanumeric: SN 1999em**
- X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S. *David Pooley, Walter H. G. Lewin, Derek W. Fox, Jon M. Miller, Christina K. Lacey, Schuyler D. Van Dyk, Kurt W. Weiler, Richard A. Sramek, Alexei V. Filippenko, Douglas C. Leonard, Stefan Immler, Roger A. Chevalier, Andrew C. Fabian, Claes Fransson, & Ken'ichi Nomoto.* 572, 932 (2002)
- Alphanumeric: XTE J1650-500**
- Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the XMM-Newton/EPIC-pn Spectrum of XTE J1650-500. *J. M. Miller, A. C. Fabian, R. Wijnands, C. S. Reynolds, M. Ehle, M. J. Freyberg, M. Van Der Klis, W. H. G. Lewin, C. Sanchez-Fernandez, & A. J. Castro-Tirado.* 570, L69 (2002)
- X-RAYS: ISM**
- Untangling the X-Ray Emission from the Sa Galaxy NGC 1291 with Chandra. *Jimmy A. Irwin, Craig L. Sarazin, & Joel N. Bregman.* 570, 152 (2002)
- Detection of X-Ray Emission from the Arches Cluster near the Galactic Center. *F. Yusef-Zadeh, C. Law, M. Wardle, Q. D. Wang, A. Fruscione, C. C. Lang, & A. Cotera.* 570, 665 (2002)
- A Chandra Study of Sagittarius A East: A Supernova Remnant Regulating the Activity of Our Galactic Center? *Y. Maeda, F. K. Baganoff, E. D. Feigelson, M. Morris, M. W. Bautz, W. N. Brandt, D. N. Burrows, J. P. Doty, G. P. Garmire, S. H. Pravdo, G. R. Ricker, & L. K. Townsley.* 570, 671 (2002)
- X-Ray, Optical, and Radio Observations of the Type II Supernovae 1999em and 1998S. *David Pooley, Walter H. G. Lewin, Derek W. Fox, Jon M. Miller, Christina K. Lacey, Schuyler D. Van Dyk, Kurt W. Weiler, Richard A. Sramek, Alexei V. Filippenko, Douglas C. Leonard, Stefan Immler, Roger A. Chevalier, Andrew C. Fabian, Claes Fransson, & Ken'ichi Nomoto.* 572, 932 (2002)
- X-RAYS: STARS**
- Untangling the X-Ray Emission from the Sa Galaxy NGC 1291 with Chandra. *Jimmy A. Irwin, Craig L. Sarazin, & Joel N. Bregman.* 570, 152 (2002)
- X-Ray Emission from Central Binary Systems of Planetary Nebulae. *Noam Soker & Joel H. Kastner.* 570, 245 (2002)
- Bright X-Ray Sources in M31 Globular Clusters. *R. Di Stefano, A. K. H. Kong, M. R. Garcia, P. Barmby, J. Greiner, S. S. Murray, & F. A. Primini.* 570, 618 (2002)
- Infrared Photometric Variability of GX 13+1 and GX 17+2. *Reba M. Bandyopadhyay, Philip A. Charles, Tariq Shahbaz, & R. Mark Wagner.* 570, 793 (2002)

- Quiescent and Flaring Structure in RS Canum Venaticorum Stars. *J. Sanz-Forcada, N. S. Brickhouse, & A. K. Dupree.* 570, 799 (2002)
- Evidence of Spin and Energy Extraction in a Galactic Black Hole Candidate: the XMM-Newton/EPIC-pn Spectrum of XTE J1650–500. *J. M. Miller, A. C. Fabian, R. Wijnands, C. S. Reynolds, M. Ehle, M. J. Freyberg, M. Van Der Klis, W. H. G. Lewin, C. Sanchez-Fernandez, & A. J. Castro-Tirado.* 570, L69 (2002)
- A Deep Search for Pulsations from the Nearby Isolated Neutron Star RX J1856.5–3754. *Scott M. Ransom, Bryan M. Gaensler, & Patrick O. Slane.* 570, L75 (2002)
- X-Ray Timing of the Enigmatic Neutron Star RX J0720.4–3125. *D. L. Kaplan & S. R. Kulkarni.* 570, L79 (2002)
- Very Low Luminosities from the Accretion-driven Millisecond X-Ray Pulsar SAX J1808.4–3658 during Quiescence. *Rudy Wijnands, Lucien Kuiper, Jean in 't Zand, Tadayasu Dotani, Michiel van der Klis, & John Heise.* 571, 429 (2002)
- On the X-Ray Source Luminosity Distributions in the Bulge and Disk of M31: First Results from the XMM-Newton Survey. *Sergey P. Trudolyubov, Konstantin N. Borozdin, William C. Priedhorsky, Keith O. Mason, & France A. Cordova.* 571, L17 (2002)
- On the Population of Wind-Accreting Neutron Stars in the Galaxy. *Eric Pfahl, Sual Rappaport, & Phillip Podsiadlowski.* 571, L37 (2002)
- Study of the Largest Multiwavelength Campaign of the Microquasar GRS 1915+105. *Y. Ueda, K. Yamaoka, C. Sánchez-Fernández, V. Dhawan, S. Chaty, J. E. Grove, M. McCollough, A. J. Castro-Tirado, F. Mirabel, K. Kohno, M. Feroci, P. Casella, S. A. Trushkin, H. Castaneda, J. Rodríguez, P. Durouchoux, K. Ebisawa, T. Kotani, J. Swank, & H. Inoue.* 571, 918 (2002)
- Confronting Neutron Star Cooling Theories with New Observations. *S. Tsuruta, M. A. Teter, T. Takatsuka, T. Tatsumi, & R. Tamagaki.* 571, L143 (2002)
- Chandra and ASCA Observations of the X-Ray-brightest T Tauri Stars in the  $\rho$  Ophiuchi Cloud. *Kensuke Imanishi, Masahiro Tsujimoto, & Katsuji Koyama.* 572, 300 (2002)
- Magnetic Flaring in the Pre-Main-Sequence Sun and Implications for the Early Solar System. *Eric D. Feigelson, Gordon P. Garmire, & Steven H. Pravdo.* 572, 335 (2002)
- A Unified Description of the Timing Features of Accreting X-Ray Binaries. *Tomaso Belloni, Dimitrios Psaltis, & Michiel van der Klis.* 572, 392 (2002)
- XMM-Newton Detection of Hard X-Ray Emission in the Nitrogen-Type Wolf-Rayet Star WR 110. *Stephen L. Skinner, Svetozar A. Zhekov, Manuel Güdel, & Werner Schmutz.* 572, 477 (2002)
- Variability of the X-Ray P Cygni Line Profiles from Circinus X-1 Near Zero Phase. *N. S. Schultz & W. N. Brandt.* 572, 971 (2002)
- The Soft Gamma-Ray Spectral Variability of Cygnus X-1. *M. L. McConnell, A. A. Zdziarski, K. Bennett, H. Bloemen, W. Collmar, W. Hermsen, L. Kuiper, W. Paciesas, B. F. Philips, J. Poutanen, J. M. Ryan, V. Schönfelder, H. Steinle, & A. W. Strong.* 572, 984 (2002)
- Is RX J1856.5–3754 a Quark Star? *Jeremy J. Drake, Herman L. Marshall, Stefan Dreizler, Peter E. Freeman, Antonella Fruscione, Michael Juda, Vinay Kasyap, Fabrizio Nicastro, Deron O. Pease, Bradford J. Wargelin, & Klaus Werner.* 572, 996 (2002)
- A Chandra Observation of the Globular Cluster Terzan 1: The Neutron Star X-Ray Transient X1732-304 in Quiescence. *Rudy Wijnands, Craig O. Heinke, & Jonathan E. Grindlay.* 572, 1002 (2002)



